

**CRITICAL INFRASTRUCTURE PREPAREDNESS AND
RESILIENCE: A FOCUS ON WATER**

HEARING

BEFORE THE

COMMITTEE ON HOMELAND SECURITY

HOUSE OF REPRESENTATIVES

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CRITICAL INFRASTRUCTURE PREPAREDNESS AND RESILIENCE: A FOCUS ON WATER

Wednesday, September 21, 2022

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
Washington, DC.

The committee met, pursuant to notice, at 10:06 a.m., in room 310, Cannon House Office Building, Hon. Bennie G. Thompson [Chairman of the committee] presiding.

Present: Representatives Thompson, Jackson Lee, Langevin, Payne, Slotkin, Cleaver, Clarke, Watson Coleman, Demings, Barragán, Gottheimer, Katko, Higgins, Guest, Miller-Meeks, Harshbarger, Gimenez, LaTurner, Meijer, Cammack, Pfluger, and Flores.

Chairman THOMPSON. The Committee on Homeland Security will be in order.

Without objection, the Chair is authorized to declare the committee in recess at any point.

Good morning. I would like to begin by saying that my thoughts are with those living in Alaska, Puerto Rico, California, and Oregon who are experiencing disasters. Over the weekend, Alaskans felt the impact of a typhoon, while Puerto Rico was hit with Hurricane Fiona, nearly 5 years to the day since Hurricane Maria. Meanwhile, Americans in the West are dealing with wildfires and record-breaking temperatures. As the Nation continues to cope with simultaneous natural disasters, and as we recognize National Preparedness Month this month, today's hearing on preparedness and resilience is timely.

The preparedness and resilience of critical infrastructure, and particularly water infrastructure, hits close to home. My community of Jackson, Mississippi, suffered serious flooding last month, which contributed to the failure of a water pumping station and left more than 100,000 of my constituents without clean water or appropriately managed wastewater. Residents could not use the water coming out of their faucets to brush their teeth, bathe, or wash the dishes. The lack of water led to school and business closures, and tens of millions of gallons of untreated wastewater flowed into Jackson-area waterways. The State has recently lifted the boil water advisory, but sporadic boil water notices continue in the city.

This crisis is not over and will not be over until we fix the underlying problems that caused it, starting with a lack of investment in critical infrastructure, such as our water systems. Jackson is not alone. Many areas around the country have suffered from dis-

investment and struggle with aging infrastructure, particularly in communities of color and low-income areas. In fact, of the water systems that consistently violate Federal drinking water standards, 40 percent of them serve communities of color. That is not a coincidence. Studies show that Black and Brown communities are more likely to bear the brunt of natural disasters. To make matters worse, infrastructure investments and disaster assistance are often directed to areas that already have more resources rather than those that desperately need it. I have seen this time and time again as these dollars are steered away from communities like those I represent.

Clearly, FEMA and its partners must do a better job of ensuring that States provide Federal funding to those communities most in need. For years, I have been a champion of equity. This Congress I was proud to see my legislation, the FEMA Equity Act, pass the House as part of the National Defense Authorization Act. I intend for this legislation to be part of a concerted effort to address the lack of equity in infrastructure investment, disaster assistance funding, and other Federal programs. I applaud the Biden administration's commitment to that work, and I will do everything in my power to ensure we make real progress for Jackson and communities like mine across the United States.

To that end, I am looking forward to having a fruitful discussion today about how we can invest in infrastructure, improve preparedness, and bolster resilience so that all communities have the tools they need to weather the storms we face.

With that, I look forward to the discussion today and I thank the witnesses for their participation.

[The statement of Chairman Thompson follows:]

STATEMENT OF CHAIRMAN BENNIE G. THOMPSON

SEPTEMBER 21, 2022

I would like to begin by saying that my thoughts are with those in Alaska, Puerto Rico, California, and Oregon who are experiencing disasters. Over the weekend, Alaskans felt the impact of a typhoon, while Puerto Rico was hit with Hurricane Fiona, nearly 5 years to the day since Hurricane Maria. Meanwhile, Americans in the West are dealing with wildfires and record-breaking temperatures.

As the Nation continues to cope with simultaneous natural disasters, and as we recognize National Preparedness Month this month, today's hearing on preparedness and resilience is timely. The preparedness and resilience of critical infrastructure, and particularly water infrastructure, hits close to home.

My community of Jackson, Mississippi, suffered serious flooding last month, which contributed to the failure of a water pumping station and left more than 100,000 of my constituents without clean water or appropriately managed wastewater. Residents could not use the water coming out of their faucets to brush their teeth, bathe, or wash the dishes. The lack of water led to school and business closures, and tens of millions of gallons of untreated wastewater flowed into Jackson-area waterways. The State has recently lifted the boil water advisory, but sporadic boil water notices continue in the city. This crisis is not over—and will not be over until we fix the underlying problems that caused it, starting with a lack of investment in critical infrastructure, such as our water systems.

Jackson is not alone—many areas around the country have suffered from disinvestment and struggle with aging infrastructure, particularly in communities of color and low-income areas. In fact, of the water systems that consistently violate Federal drinking water standards, 40 percent of them serve communities of color. That is not a coincidence. Studies show that Black and Brown communities are more likely to bear the brunt of natural disasters.

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perately need it. I have seen this time and time again as these dollars are steered away from communities like those I represent. Clearly, FEMA and its partners must do a better job of ensuring States provide Federal funding to those communities most in need.

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To that end, I am looking forward to having a fruitful discussion today about how we can invest in infrastructure, improve preparedness, and bolster resilience so that all communities have the tools they need to weather the storms we face.

Chairman THOMPSON. The Chair recognizes the Ranking Member of the full committee, the gentleman from New York, Mr. Katko, for an opening statement.

Mr. KATKO. Thank you very much, Mr. Chairman. I echo your sentiments and you will hear those are my words in a moment.

Before I begin, I would like to say that I am encouraged, Mr. Chairman, that the water services have been restored in Jackson, Mississippi. I realize there is still a lot more work to be done. It is my sincere hope that the situation continues to move in the right direction. It is my understanding that FEMA, the U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency are currently working with Mississippi Emergency Management Agency and the city of Jackson to identify longer-term solutions to improve the water infrastructure in Jackson. Jackson is emblematic of a lot of our communities Nation-wide—Flint, Michigan, for example, and many others.

I am heartened by the fact that we have a massive infrastructure bill that we have passed that hopefully will provide a lot more dollars to these jurisdictions. For the life of me, I do not understand how not everyone supported that infrastructure bill. It is times like this when you realize how important it really is.

I hope that the process for Jackson moves quickly because access to clean water is critical to the overall health and economic security of a community.

I would also like to express my concern for the on-going situation in Puerto Rico. Hurricane Fiona has caused catastrophic flooding and island-wide blackouts. This most recent hurricane comes while Puerto Rico is still recovering from Hurricanes Irma and Maria, which devastated the island 5 years ago. I lived in Puerto Rico as a prosecutor in the mid-90’s and I was struck by how dilapidated their infrastructure was then. From what I can see it has gotten nothing but worse and we need to help them as well.

But this is why I want to thank the Chairman for holding this very important hearing on the cyber and fiscal threats facing our Nation’s critical infrastructure, with a particular focus on water infrastructure. As we have seen in recent years, America’s aging infrastructure systems are increasingly susceptible to ransomware and cyber attacks, and our water systems are no exception.

In February 2021 a hacker remotely altered the chemicals in a water treatment system in Oldsmar, Florida. If a plant operator hadn’t noticed the attack, it is estimated that a city of about 15,000 people would have been exposed to highly poisonous levels of

chemicals in their water. This incident demonstrated first-hand the real-world and devastating consequences that a cyber attack can have on our systems. Unfortunately, the attack in Florida was not an anomaly.

For this reason, I introduce the Department of Homeland Security Industrial Control System Enhancement Act of 2021. My legislation, which was co-sponsored by the Chairman, which I appreciate, was solidified as Cybersecurity and Infrastructure Security Agency's, or CISA's, lead role in protecting our Nation's critical infrastructure, particularly industrial control systems from cyber threats.

The committee's cyber subcommittee also just held the hearing on industrial control systems cybersecurity, which further exemplifies how Congress is taking this issue very seriously.

In addition to being susceptible to cyber attacks, aging water infrastructure also poses a growing threat to economic growth, public health, and our environment. In central New York, we are no strangers to the challenges caused by water infrastructure. In the Finger Lakes Region harmful algal blooms present severe health risks to humans and aquatic life, while sustained high-water levels continue to threaten home and businesses in communities along Lake Ontario.

That is why during my time in Congress I have led efforts to modernize our Nation's water systems and have worked hard to provide safe, clean, and reliable drinking water to all of my constituents. Most recently I was proud to introduce the Water Infrastructure Modernization Act of 2021. My legislation would expand on local efforts to develop and deploy smart water technology in central New York. By making this technology more wide-spread, we will be taking meaningful steps to improve water quality and bolster the reliability and sustainability of our water systems.

In addition to introducing this legislation, I have also worked with colleagues from both sides of the aisle to ensure robust funding for the primary Federal programs that assist State and local governments with water infrastructure needs. The Drinking Water and Clean Water State Revolving Funds. Since their creation these programs have provided billions in interest-free loans and grants to State and local governments with water infrastructure needs. For this reason, I was proud to support the recent bipartisan infrastructure bill, as I mentioned, to bolster these crucial funding streams and to maintain this advocacy through the Congressional appropriations process.

As demand for these programs continues to grow, it is critical that we keep an eye toward Federal support for the security of our water infrastructure assets.

In conclusion, the water crisis in Jackson comes at a time when our country is having a serious conversation about the future of our Nation's critical infrastructure systems. While the Members of this committee represent a wide range of districts, rural, urban, large, and small, we have all been impacted in some way by the issue of aging infrastructure. Given this fact, I look forward to hearing from all of you today about how to increase infrastructure resiliency across the country.

Mr. Chairman, I thank you very much for your indulgence, and apologize for being a few minutes late. That is what happens when you have a new knee and physical therapy. But I apologize.

But I thank you very much and I yield back the balance of my time.

[The statement of Ranking Member Katko follows:]

STATEMENT OF RANKING MEMBER JOHN KATKO

Mr. Chairman: Before I begin, I would like to say that I am encouraged to hear that water services have been restored in Jackson, Mississippi. While I realize there is still a lot more work to be done, it is my sincere hope that the situation continues to move in the right direction.

It is my understanding that FEMA, the U.S. Army Corps of Engineers (USACE), and the U.S. Environmental Protection Agency (EPA) are currently working with the Mississippi Emergency Management Agency (MEMA) and the city of Jackson to identify longer-term solutions to improve the water infrastructure in Jackson. I hope that this process moves quickly, because access to clean water is critical to the overall health and economic security of a community.

I would also like to express my concern for the on-going situation in Puerto Rico. Hurricane Fiona has caused catastrophic flooding and island-wide blackouts. This most recent Hurricane comes while Puerto Rico is still recovering from Hurricanes Irma and Maria, which devastated the island 5 years ago.

With this in mind, I want to thank the Chairman for holding this very important hearing on the cyber and physical threats facing our Nation's critical infrastructure, with a particular focus on water infrastructure.

As we have seen in recent years, America's aging infrastructure systems are increasingly susceptible to ransomware and cyber attacks. And our water systems are no exception.

In February 2021, a hacker remotely altered the chemicals in a water treatment system in Oldsmar, Florida. If a plant operator hadn't noticed the attack, it's estimated that a city of about 15,000 people would have been exposed to poisonous levels of chemicals in their water.

This incident demonstrated first-hand the devastating, real-world consequences that a cyber attack can have. And unfortunately, the attack in Florida was not an anomaly.

For this reason, I introduced the DHS Industrial Control Systems Enhancement Act of 2021. My legislation, which was cosponsored by the Chairman, would solidify the Cybersecurity & Infrastructure Security Agency's (CISA) lead role in protecting our Nation's critical infrastructure, particularly industrial control systems (ICS), from cyber threats. The Committee's cyber subcommittee also just held a hearing on ICS cybersecurity, which further exemplifies how Congress is taking this issue seriously.

In addition to being susceptible to cyber attacks, aging water infrastructure also poses a growing threat to economic growth, public health, and our environment.

In Central New York, we are no strangers to the challenges caused by water infrastructure. In the Finger Lakes Region, harmful algal blooms present severe health risks to humans and aquatic life. While sustained high-water levels continues to threaten homes and businesses in communities along Lake Ontario.

That is why, during my time in Congress I have led efforts to modernize our Nation's water systems and have worked hard to provide safe, clean, and reliable drinking water to all of my constituents.

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As demand for these programs continues to grow, it is critical that we keep an eye toward Federal support for the security of our water infrastructure assets.

In conclusion, the water crisis in Jackson comes at a time when our country is having a serious conversation about the future of our Nation's critical infrastructure systems.

While the Members of this committee represent a wide range of districts—rural and urban, large, and small—we have all been impacted in some way by the issue of aging infrastructure.

Given this fact, I look forward to hearing from all of our witnesses here today about how to increase infrastructure resiliency across the country.

Thank you, Mr. Chairman and with that I yield back.

Chairman THOMPSON. The gentleman yields back.

Other Members of the committee are reminded that under the committee rules opening statements may be submitted for the record.

Members are also reminded that the committee will operate according to the guidelines laid out by the Chairman and Ranking Member in our February 3, 2021 colloquy regarding remote procedures.

I welcome our panel of witnesses.

Our first witness, Mr. Craig Fugate, was administrator of the Federal Emergency Management Agency, commonly referred to as FEMA, from 2009 until 2017. He led the agency's response to multiple record-breaking storms and over 500 Presidentially-declared major disasters and emergencies. Prior to his service at FEMA, Mr. Fugate served as director of the Florida Division of Emergency Management.

Our second witness, Mr. David Gadis, is the CEO and general manager of D.C. Water, one of the Nation's largest water utilities where he oversees a \$1 billion annual budget and leads approximately 1,200 employees. Mr. Gadis also serves as member of the President's National Infrastructure Advisory Committee.

Our third witness, Ms. Abre' Conner, is the director of the environmental and climate justice for the NAACP. In that capacity she oversees strategy and collaboration across the association to dismantle environmental racism.

Our final witness, Mr. John O'Connell, is senior vice president of the National Rural Water Association. In NRWA he helps lead the organization's work to train, support, and promote the water and wastewater professionals serving small communities across the country, especially like one that I live in. We are glad to have you.

Without objection, the witnesses' full statements will be included in the record.

The Chair asks each witness to summarize his or her statement for 5 minutes beginning with Mr. Fugate.

**STATEMENT OF W. CRAIG FUGATE, PRIVATE CITIZEN,
FORMER ADMINISTRATOR, FEDERAL EMERGENCY MANAGE-
MENT AGENCY**

Mr. FUGATE. Well, good morning, Mr. Chairman, Ranking Member Katko, and other Members of the committee. It is an honor to be here.

What happened in Jackson, Mississippi I think a lot of people dismissed as well, that is Jackson, Mississippi, that is there, it won't happen to other places. But in my history of responding to disasters, I have seen systems come so close that much larger sys-

tems almost failed. Example, the 2010 record-setting floods in Nashville impacted both of their water treatment plants. One was flooded and shut down, resulting in 50 percent of the capacity for the Nashville region losing potable water. The other facility came within 1 foot of failure, and only by heroic sandbagging efforts could they save it. It took over 30 days to repair the first facility before they could get full water back up to Nashville. As the Ranking Member pointed out, this was not only public safety in drinking water, it was economic, because it slowed down the recovery because they couldn't even bring back their tourism venues until they got that plant back on-line. That is not the only story.

Columbia, South Carolina, 2014. Record-setting floods blew out the intake canal to the water treatment plan for the city of Columbia, South Carolina. This was when Nikki Haley was Governor. The National Guard literally was taking helicopters flying 3,000-pound sandbags trying to rebuild and fortify that intake so they would not lose the water system.

Then we know about Flint, Michigan. But once again, FEMA was asked to come in on an emergency basis when a system failed because of extremely high lead levels. And in that response, FEMA was engaged in emergency action, including helping distribute bottled water, water filters, and other support for over 8 months.

Those are just tips of the iceberg. But the thing that I want to focus on is the record-setting flooding. If you look at most water systems, those that depend upon surface water were built based upon the 100-year flood zone, which is a misnomer. There is no such thing as a 100-year flood zone. It comes from the National Flood Insurance who rate maps of a special risk area. This terminology that we have used is really confusing when we say we are looking at 100-year floods or 1 percent risk, was based on historical average looking back 100 years. But as the *Washington Post* published a couple of weeks ago, we had 5 1,000-year events in 5 weeks. So not only do we have aging infrastructure, which EPA estimates about \$750 billion worth of repairs need to be made. Many of our water treatment plants across the Nation are at increasing risk in these extreme rainfall flood events because they were built for the last 100 years. This comes from the General Accounting Office recommendations back to Congress at the request of the Senate Committee to make recommendations on how we start building climate resilience into our critical infrastructure. What is happening in Puerto Rico reinforces that. Merely building back what was there, only to be destroyed once again, is not a good investment of my tax dollars, sir. As a Federal taxpayer, I would be willing to pay a little bit more on the front end so we are not coming back time and time again with these types of failures.

So it is a combination of problems that is both an aging infrastructure—in many cases, smaller communities, communities of color, rural communities, lack of resources to maintain the systems, increased risk of natural hazards—mainly flooding, but drought is also driving a lot of these impacts, and a tendency to want to get back in there quickly, make repairs, and move on without really understanding that building for climate resilience means you have got to build for the future, not for the past.

With that, I will stand by for questions, Mr. Chairman.

[The prepared statement of Mr. Fugate follows:]

PREPARED STATEMENT OF W. CRAIG FUGATE

WEDNESDAY, SEPTEMBER 21, 2022

Chairman Thompson, Ranking Member Katko, and Members of the committee, thank you for inviting me to testify today.

With the recent reports from the Jackson, Mississippi on their drinking water system, both flooding and preexisting conditions resulted in the total failure of the system. We are seeing more record-setting floods impact aging drinking water infrastructure across the Nation. What happened in Jackson is not an exception, but an indicator for future failures.

My questions are, how many community drinking water systems are at risk of similar failure? And, with a marked increase in extreme flood events, how many drinking water systems that were built to standards based on past flood risk history will fail in the next record-setting flood?

BACKGROUND

Department of Homeland Security has established Water and Wastewater systems as National Critical Functions (NCF's). Per DHS, "Safe drinking water is central to the life of an individual and of society, a drinking water contamination incident or the failure of drinking water services would have far-reaching public health, economic, environmental, and psychological impacts across the Nation. Other critical services such as fire protection, health care, and heating and cooling processes would also be disrupted by the interruption or cessation of drinking water service, resulting in significant consequences to the national or regional economies"¹

"Every day, more than 150,000 public water systems provide drinking water to millions of Americans and U.S. wastewater treatment facilities process approximately 34 billion gallons of wastewater. Considered National Critical Functions (NCFs), both the ability to 'supply water' and 'manage wastewater' are functions of government and the private sector so vital to the U.S. that their disruption, corruption, or dysfunction would have a debilitating effect on security, national economic security, national public health or safety, or any combination thereof".²

During my time as FEMA Administrator (2009–2017), I oversaw the response to numerous flood and other disasters that impacted water treatment facilities. Notable events include:

2010 Floods, Nashville, Tennessee

K.R. Harrington Water Treatment Plant (WTP) was flooded and the other major WTP, Omohundro, came within 1 foot of flooding as well. Metro Water Services was reduced to 50 percent capacity for a month while repairs to the Harrington WTP were completed.³

2015 Floods, Columbia, South Carolina

A canal that serves as the main source of drinking water for about half of the Columbia water system's 375,000 customers collapsed in two places following historic rainfall and flooding over the weekend, sending contractors scrambling to build a rock dam to plug the holes while National Guard helicopters dropped giant sandbags in the rushing water.⁴

Water Crisis, Flint, Michigan

High lead levels and other issues resulted in a Presidential Emergency Declaration with FEMA providing support to the State of Michigan for 8 months.⁵

Not considering the impacts of disasters on drinking water systems, many water systems are behind in replacing aging infrastructure. Both the American Water Works Association⁶ and the EPA identify renewal and replacement of ageing water infrastructure as a primary concern. EPA estimates that drinking water and waste-

¹ DHS, The 2015 Water and Wastewater Sector-Specific Plan.

² <https://www.cisa.gov/ncf-water>.

³ https://www.nashvillescene.com/news/b-one-year-later-b-how-the-flood-almost-left-nashville-without-water/article_cf2ea3e3-0947-5b3b-afc2-aec5df825ae8.html.

⁴ <https://toronto.citynews.ca/2015/10/08/as-flooding-recedes-after-historic-rains-coming-home-in-south-carolina-can-lead-to-heartbreak/>.

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5353852/>.

⁶ <https://www.awwa.org/AWWA-Articles/awwas-state-of-the-water-industry-report-now-available>.

water utilities need to invest almost \$744 billion to repair and replace their existing infrastructure over the next 20 years.

Adding to issue of aging infrastructure, poor financial health of some drinking water systems has resulted in delayed maintenance, low staffing levels, lack of training, that increases the likelihood of system failures.

NEXT STEPS

The General Accounting Office (GAO) was asked to review what Federal actions may be taken to reduce the potential impacts of climate change and related effects on drinking water and wastewater infrastructure. Their report "Technical Assistance and Climate Resilience Planning Could Help Utilities Prepare for Potential Climate Change Impacts" GAO-20-24 Published: Jan 16, 2020. Publicly Released: Feb 13, 2020.

GAO recommends that EPA identify technical assistance providers and engage them in a network to help water utilities incorporate climate resilience into infrastructure projects.

GAO also recommends that Congress should consider requiring that climate resilience be incorporated in the planning of all drinking water and wastewater projects that receive Federal financial assistance from programs that EPA, FEMA, HUD, and USDA administer.

I recommend that this committee consider requesting relevant agencies conduct a risk assessment of existing drinking water facilities based on increasing flood risk and aging infrastructure to identify vulnerable communities.

And finally, these reviews should consider past actions that have resulted in lack of investment or barriers to Federal funding at the local level for repairing and upgrading drinking water systems.

Chairman THOMPSON. Thank you for your testimony, Mr. Fugate.

The Chair recognizes Mr. Gadis to summarize his statement for 5 minutes.

STATEMENT OF DAVID L. GADIS, CEO AND GENERAL MANAGER, DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Mr. GADIS. Thank you very much.

Chairman Thompson, Ranking Member Katko, and distinguished Members of the committee, I am David Gadis, CEO and general manager of D.C. Water and a member of President Biden's National Infrastructure Advisory Council. Thank you for the opportunity to testify today on the resiliency of the Nation's critical water infrastructure and the importance of making environmental justice and water equity part of that conversation.

As CEO of D.C. Water, I oversee a \$1 billion annual budget, a work force of approximately 1,200 employees, the distribution of drinking water in the Nation's capitol, and the largest advanced wastewater treatment plant in the world that provides services to nearly 700,000 residents in Washington, DC and another 1.6 million residents in the neighboring counties of Maryland and Virginia.

Since taking leadership in 2018 a goal of mine has been to lead transformation initiatives related to environmental justice and water equity, including our first-in-class customer assistance programs and Lead-Free D.C. initiative, which will eliminate all lead service lines within the District by 2030.

As the recent water crisis in Jackson, Mississippi has highlighted, Federal policy to secure the resilience of the Nation's critical water infrastructure must include consideration of environmental justice and water equity and climate change. As the funds for water investment are distributed from the Infrastructure Investment and Jobs Act, we must be sure these resources are dis-

tributed on an equitable basis to all communities. In my role serving communities in the District of Columbia who have often been overlooked for these investments in the past, I have a unique vantage point on these issues and know that today's under-investment is tomorrow's crisis.

Our primary mission at D.C. Water is to deliver clean, safe, and reliable drinking water to our residents. This includes protecting water and wastewater infrastructure from potential threats, including physical and cyber attacks. As part of this on-going cyber resiliency effort, D.C. Water is a member of the sector of the National Cybersecurity Task Force. We are also partnering with the Environmental Protection Agency, Cybersecurity and Infrastructure Security Agency, as well, and Water Sector Coordinating Council, also known as WSCC.

To help develop recommendations for improving cybersecurity for our sector, our cybersecurity model is based on the NIST's cybersecurity framework. We limit access to physical facilities and data systems, we have continuous monitoring of an analysis of our systems for potential threats and are able to block attacks and maintain systems. Maintaining a strong cyber defense is just as much a part of our infrastructure as maintaining our pipes and filtration systems. Robust planning for cybersecurity is no longer optional in the water sector. It is a key part of what we do every day.

The Federal Government is a key partner in maintaining and upgrading water infrastructure. For example, I am pleased that last month FEMA announced a \$20 million grant for construction of a flood wall around Blue Plains Wastewater Treatment Plant here in the District of Columbia. This grant will help support resilience against predicted sea-level rise, providing protection for a plant that serves over 2 million people in the District, also in Maryland and Virginia.

Also in my newly-appointed role as the water utility expert on the President's National Infrastructure Advisory Council, I am looking forward to working with the White House on how to improve local and Federal partnerships and improve security and resilience of the Nation's critical water sector.

Further, the Infrastructure Investment and Jobs Act gives us an important initial investment in starting the process to restore our aging water infrastructure and also wastewater infrastructure.

As we look to building a long-term resilience into critical infrastructure, I would ask that Congress continue its commitment to grow this water infrastructure funding as there is still much work to be done. For example, not all the water infrastructure programs that are created in today's bills are actually funded. I ask that Congress fully fund all the water infrastructure programs that were authorized in the IHAA in the fiscal year 2023 appropriations legislation, including two programs that would directly support the physical and the cyber resiliency within the water sector.

In my role with D.C. Water I know that there are many challenges ahead, however I also know these challenges can be met. The issues facing water utilities are not insurmountable, but they are complex.

Again, I thank you for inviting me to testify before you today and I look forward to working with you to tackle these policy issues head on.

Thank you very much.

[The prepared statement of Mr. Gadis follows:]

PREPARED STATEMENT OF DAVID L. GADIS

SEPTEMBER 21, 2022, 10 A.M.

Chairman Thompson, Ranking Member Katko, and distinguished Members of the committee, I am David Gadis, CEO and general manager of DC Water and a member of President Biden's National Infrastructure Advisory Council. Thank you for the opportunity to testify today on the resiliency of the Nation's critical water infrastructure and the importance of making environmental justice and water equity part of that conversation.

As CEO of DC Water, I oversee a \$1 billion annual budget, a workforce of approximately 1,200 employees, the distribution of drinking water in the Nation's capital, and the largest advanced wastewater treatment plant in the world that provides services for nearly 700,000 residents in Washington DC and another 1.6 million residents in neighboring counties in Maryland and Virginia. Since taking leadership in 2018, a goal of mine has been to lead transformative initiatives related to environmental justice and water equity including our first-in-class customer assistance programs and the Lead Free DC initiative, which will eliminate all lead service lines within the District by 2030.

As the recent water crisis in Jackson, Mississippi has highlighted, Federal policy to secure the resilience of the Nation's critical water infrastructure must include consideration of environmental justice and water equity, and climate change. As the funds for water investment are distributed from the Infrastructure Investment and Jobs Act, we must be sure these resources are distributed on an equitable basis to all communities. In my role serving communities in the District of Columbia who have often been overlooked for these investments in the past, I have a unique vantage point on these issues and know that today's underinvestment is tomorrow's crisis.

Our primary mission at DC Water is to deliver clean, safe, and reliable drinking water to our residents. This includes protecting water and wastewater infrastructure from potential threats, including physical and cyber attacks. As part of this ongoing cyber resiliency effort, DC Water, as a member of the Water Sector National Cyber Security Taskforce, is partnering with the Environmental Protection Agency (EPA), Cybersecurity and Infrastructure Security Agency (CISA), and Water Sector Coordinating Council (WSCC) to help develop recommendations for improving cyber security for the sector. Our cyber security model is based on the NIST cybersecurity framework. We limit access to physical facilities and data systems, have continuous monitoring and analysis of all our systems for potential threats, and are able to block attacks and maintain systems. Maintaining a strong cyber defense is just as much a part of our infrastructure as maintaining our pipes and filtration systems. Robust planning for cybersecurity is no longer optional in the water sector—it is a key part of what we do every day.

The Federal Government is a key partner in maintaining and upgrading our water infrastructure. For example, I'm pleased that last month FEMA announced a \$20 million grant for construction of a floodwall around the Blue Plains Wastewater Treatment Plant. This grant will help support resilience against predicted sea-level rise, providing protection for a plant that serves over 2 million people in the District, Maryland, and Virginia.

Also, in my newly-appointed role as the water utility expert on the President's National Infrastructure Advisory Council, I am looking forward to working with the White House on how to improve local and Federal partnerships and improve the security and resilience of the Nation's critical water infrastructure sector.

Further, the Infrastructure Investment and Jobs Act (IIJA) gives us an important initial investment in starting the process to restore our aging water and wastewater infrastructure. As we look to build long-term resilience into this critical infrastructure, I would ask that Congress continue its commitment to grow this water infrastructure funding, as there is still much work to be done. For example, not all of the water infrastructure programs that were created in IIJA were actually funded. I ask that Congress fully fund ALL the water infrastructure programs that were authorized in IIJA in the fiscal year 2023 appropriations legislation—including two programs that would directly support both physical and cyber resiliency within the

water sector: The Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program; and the Clean Water Infrastructure Resiliency and Sustainability Program.

In addition to increased, sustained Federal funding, Congress has the ability to increase our resiliency by creating a secondary water source for National Capital region. Currently, DC Water is wholly reliant on the Potomac River as the source of our drinking water, and other local utilities in Maryland and Virginia are in the same position. In the event of an incident—from an accidental chemical spill to a terrorist attack—our region has no good alternative water source. The first step to solving this problem is to authorize the U.S. Army Corps of Engineers to study our best options. I want to thank the Members of the House of Representatives for their near-unanimous vote to authorize this study and ask that you urge your Senate colleagues to accept the House's provision in the final Water Resources Development Act later this year.

In my role with DC Water, I know that there are many challenges ahead. However, I also know these challenges can be met. The issues facing water utilities are not insurmountable but they are complex. Again, I thank you for inviting me to testify before you today, and I look forward to working with you to tackle these policy issues head-on.

Chairman THOMPSON. Thank you for your testimony.

The Chair now recognizes Ms. Conner to summarize her statement for 5 minutes.

STATEMENT OF ABRE' CONNER, DIRECTOR, CENTER FOR ENVIRONMENTAL AND CLIMATE JUSTICE, NAACP

Ms. CONNER. Good morning, Chairman Thompson, Ranking Member Katko, and Members of the Committee on Homeland Security.

My name is Abre' Conner and I am the director for the Center for Environmental and Climate Justice at the NAACP and a member of the faculty of the Environmental Policy and Management Program at UC Davis. Thank you for the opportunity to testify before this committee.

The history of disinvestment is evident in Black communities facing obstacles to actually creating a lasting legacy. Indeed, without immediate action Black communities will continue to live a legacy deferred. Over the last several years we have seen that failing water systems and deficient infrastructure create crisis within community function. In cities like Jackson, Mississippi; Flint, Michigan; and Baltimore, Maryland alone, there are likely hundreds of thousands of Black people who have had brown water or toxins like E. coli flowing through their faucets.

Additionally, disinvestments feel intentional when there is a pattern of scarce resources in Black cities. For example, since 1996 Mississippi has received Federal funding for drinking water systems, however Jackson has received allocations for Federal funding in just 2 of those last 25 years.

The situation in Jackson is just one example of how majority-Black cities and towns across the country have been treated in our Nation's history, continuing to the present day. My full written testimony provides examples of patterns of disinvestments in communities from nearly a century ago, like Allensworth and Rosewood. The legacy that Black people hope for and the constant similarities to deprive them of resources in places like Jackson today.

We continue to see this disinvestment because often State agencies and State legislators control what funding reaches Black communities. History is indeed repeating itself. For weeks, I spent time

meeting with Jackson residents who state that they had been using bottled water for decades because it has been normalized as simply what people do. Although Jackson has shared with the Governor detailed plans that outline the urgency of the water infrastructure issues for years, the Governor rarely, if ever, responds.

We now have new Federal investments, but the State being the first recipient creates barriers for Jackson. Mississippi received almost \$75 million under the bipartisan infrastructure law. During the Jackson water crisis, Mississippi submitted a funding structure that would cap loan forgiveness at \$500,000 knowing that it would take billions to fix Jackson's water system. Moreover, to receive American Rescue Plan funding the State passed a law that required only Jackson to receive a second set of approval through the Department of Finance and Administration, adding time to fix urgent issues and yet again cementing another legacy deferred.

Unfortunately, the situation in Jackson is not the first time that we have seen Black cities struggle due to the lack of support and infrastructure. In Flint, Michigan the NAACP filed suit because of the gross negligence of officials that failed to detect a water problem. Then, when the water crisis was known to harm Black people, the public was told to continue drinking water despite understanding that it was contaminated. In Baltimore, another predominantly Black city, E. coli was found in the water as recently as a few weeks ago.

Because these issues are systemic, there is a long history of incrementally poor decisions that leave Black cities debilitated. Congress has the ability to actualize the legacy Black communities hope for.

My full recommendations are in my written testimony.

First, I encourage Congress to pass the Environmental Justice For All Act and for this committee to assess the effectiveness of State oversight in historically disadvantaged communities for disaster preparedness. There needs to be more granular and disaggregated data for accountability as well as diversification of funding streams that are not loans. The lack of the private right of action under Title 6 and meaningful technical assistance remain concerns. Additionally, better coordination and collaboration are needed at a Federal level.

We will continue to highlight the egregious conditions of Jackson's water system and how the actions of State actors have caused discriminatory impact. But action from this Congress and the entire Federal Government is needed to ensure that there aren't similar crises in other communities.

We have made strides in the environmental and climate justice space; however, history will continue to repeat itself if we do not learn from the past. We need urgent action to ensure that this Congress is remembered as the body that helped to break the cycle.

[The prepared statement of Ms. Conner follows:]

PREPARED STATEMENT OF ABRE' CONNER

SEPTEMBER 21, 2022

I. INTRODUCTION

Good morning Chairman Thompson and Members of the committee on Homeland Security. My name is Abre' Conner, and I am the director for the Center for Environmental and Climate Justice at the NAACP and a faculty member of the Environmental Policy and Management Program at the University of California, Davis. Thank you for the opportunity to testify before this committee during National Disaster Preparedness Month regarding resilience and security within Black and low-income communities across the country.

Over the last several years, we have seen that failing water systems and deficient infrastructure interfere with the fundamental operation of key community functions.¹ We meet at a historic moment as the Biden administration has elevated environmental justice through efforts like the Justice40 Initiative.² Moreover, the Inflation Reduction Act offers the largest direct environmental justice investments to date in the United States.³ Pursuant to the Safe Drinking Water Act, the Environmental Protection Agency ("EPA") has authority to allocate \$50 million to midsize and large drinking water systems for the specific purpose of improving resilience to hazards including attacks to cybersecurity that weaken communities.⁴ These allocations reflect the critical impact of climate issues on our communities. The effect of climate change on Black people has finally come into National focus because Black people experience the most horrific impacts from historic disinvestment in communities. Communities that are years or decades behind on infrastructure maintenance and repairs are ill-prepared for disasters to come. Failure to invest in Black communities and the ramifications that follow are rooted in a history of environmental racism that continues to this day. If we examine the effects on cities like Jackson, Mississippi ("Jackson"), Flint, Michigan, and Baltimore, Maryland ("Baltimore"), alone, there are likely hundreds of thousands of Black people who have had brown water or toxins like E. coli flowing through their faucets within the last several years—a source of water meant to do daily tasks such as brushing their teeth, bathing children and showering, or drinking.⁵

Moreover, schools are affected by this systematic disinvestment. In Jackson, students have been bounced from in-person to virtual learning because of poor water

¹News21 Staff, et al., *Crumbling pipes, tainted water plague black communities*, Center for Public Integrity, (Aug. 21, 2017), <https://publicintegrity.org/environment/crumbling-pipes-tainted-water-plague-black-communities/>; Jennifer Allen, *Report Links Racial, Environmental Justice*, Coastal Review Online (Sept. 9, 2020), https://coastalreview.org/2020/09/report_links-racial-environmental-justice/.

²The White House, *Justice 40 A Whole-of-Government Initiative*, <https://www.whitehouse.gov/environmentaljustice/justice40/> (last visited Sept. 16, 2022).

³American Rescue Plan Act of 2021, Pub. L. No. 117-2 (2021), https://www.Congress.gov/117/plaws/publ2/PLAW_117publ2.pdf; EPA, *The Inflation Reduction Act: A Big Deal for People and the Planet* (Aug. 26, 2022), <https://www.epa.gov/perspectives/inflation-reduction-act-big-deal-people-and-planet>; Press Release, NAACP, NAACP President Derrick Johnson on Today's Signing of the Inflation Reduction Act, (Aug. 16, 2022), <https://naacp.org/articles/naacp-president-derrick-johnson-todays-signing-inflation-reduction-act>.

⁴Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program, 42 U.S.C. § 300j-19g(f); Edward Mahaffey, JDSUPRA, *Congress Provides Substantial Funding for a Variety of Water Projects in Infrastructure Law With Emphasis on Low Income Communities*, (Dec. 27, 2021), <https://www.jdsupra.com/legalnews/congress-provides-substantial-funding-6794946/>.

⁵Molly Schwartz, *The Water Crisis in Jackson, Mississippi, Is a Dire Warning Sign*, Mother Jones, (Mar. 24, 2021), <https://www.motherjones.com/politics/2021/03/water-crisis-in-jackson-mississippi-is-a-dire-warning-sign/>; Natasha Noman, *People of Flint Want You to See These Images of the Water They Were Told Was Safe to Drink*, Mic, <https://www.mic.com/articles/132732/people-of-flint-want-you-to-see-these-images-of-the-water-they-were-told-was-safe-to-drink>; David Collins, *'Abysmal, disappointing': DPW's handling of E. coli water contamination information criticized*, WBALTV 11 (Sept. 15, 2022 6:09 PM), <https://www.wbalv.com/article/baltimore-city-council-e-coli-water-contamination-first-hearing/41232055#>; United States Census Bureau, *QuickFacts Jackson city, Mississippi*, <https://www.census.gov/quickfacts/table/jacksoncitymississippi/BZA115220> (last visited Sept. 16, 2022); United States Census Bureau, *QuickFacts Flint, Michigan*, <https://www.census.gov/quickfacts/flintcitymichigan> (last visited Sept. 18, 2022); United States Census Bureau, *QuickFacts Baltimore, Maryland*, <https://www.census.gov/quickfacts/baltimorecitymaryland> (last visited Sept. 18, 2022); Telephone conversation with NAACP Maryland State and Baltimore city leadership (September 7, 2022) (notes on file, NAACP headquarters); Roundtable Conversation with Jackson Residents (September 7, 2022) (notes on file, NAACP Headquarters); Zoom conversation with NAACP unit leaders across country (September 1, 2022) (notes on file, NAACP headquarters).

quality. In some cases, school teachers and administrators have been forced to build contingency plans for flushing toilets when water pressure is low instead of teaching students in the classroom. In Jackson, health care facilities that previously relied on local water plants have been forced to develop costly alternatives to local water systems to ensure that patients have access to hygienic care when water available through the city is not clean. Moreover, lack of transparency around water quality and other public services has engendered distrust of government services in many communities.

Lack of transparency at a resident level regarding the flow of funds from Federal appropriations to States and localities as well as a lack of community input are critical issues for Black communities. State governments are typically the starting point for localities to access funding to rebuild water infrastructure. A key issue in Black communities is minimal access to financial resources without strings attached for use in repairing, replacing, and maintaining critical infrastructure. Disinvestment has also harmed efforts in communities of color to develop and support reporting systems to alert residents of critical rates of pollution.

Since 1996, Mississippi has received Federal funding for drinking water systems. However, Jackson has received allocations of Federal funding in just two of the last 25 years. When Federal funding became available as a part of the bipartisan infrastructure law, Jackson received only a small sum of funds with limitations on its use, despite the city's crumbling infrastructure. The situation in Jackson is just one example of how majority Black cities and towns around the country have been treated in our Nation's history, continuing to the present day.

The issue of water infrastructure ownership and nonresponsive State elected officials during disasters affecting Black populations runs deep in American history.⁶ As outlined below, over a century ago, Black communities experienced intentional deprivation of the city's water infrastructure that debilitated progress.⁷ This historic pattern must be changed through intentional action.

Today, I hope to make clear through my testimony the depth and breadth of water and infrastructure issues that have affected Black communities for years, why something must be done now, and how Congress plays a critical role in next steps.

II. WATER NEEDS AND RACIST ROOTS OF DIMINISHING BLACK COMMUNITY PROGRESS

Black people have always cared about environmental and climate issues but have often been left out of meaningful engagement with policy makers and advocates to assist our communities. Unfortunately, the tradition of tearing down and purposefully thwarting Black efforts at sustainability and stability of infrastructure is nothing new.⁸ Injustices in Rosewood, Florida and Allensworth, California resemble the intentional dispossession of resources we continue to witness in Black communities today.⁹ In 1923, Rosewood was a small but prosperous Black town. Because a white woman accused a Black man of beating her, white mobs completely burned the community. Florida's Governor offered no assistance to the town despite knowing about the tragedy. Currently, there are many Black communities across the country that have been categorically excluded from State resources.¹⁰ We have seen this disinvestment because often, State agencies and State legislatures control what funding reaches Black communities.

Water issues have persisted in Black communities for centuries as well. Around the time of the Rosewood fires, Allensworth, California also experienced destruction motivated by racism. Allensworth was the only California town to be founded, financed, and governed by Black people. Allensworth's economy failed due to resource

⁶ Chihiro Tamefusa, *Environmental Justice in Remediation: Tools for Community Empowerment* (2016). (B.A. thesis, Pomona College) http://scholarship.claremont.edu/pomona_theses/144.

⁷ *Infra Part II.*

⁸ Jennifer Allen, *Report Links Racial, Environmental Justice, Coastal Review Online*, (Sept. 9, 2020), <https://coastalreview.org/2020/09/report-links-racial-environmental-justice/>.

⁹ R. Thomas Dye, *Rosewood, Florida: The Destruction Of An African American Community, The Historian* 605–622, [http://users.clas.ufl.edu/davidson/arch%20of%20aa%20life%20and%20culture/Week%2011-14/Dye,%20Historian%20Vol%2058\(3\)%20Spring%201996.pdf](http://users.clas.ufl.edu/davidson/arch%20of%20aa%20life%20and%20culture/Week%2011-14/Dye,%20Historian%20Vol%2058(3)%20Spring%201996.pdf) (last visited Sep. 16, 2022); Bilal G. Morris, *The Downfall of Allensworth: How Racism And Lies Destroyed A Black Town In California*, *Newsone* (May 16, 2022), <https://newsone.com/4337335/allensworth-california-black-town-destroyed-by-racism/>; Erica Rose Thomson, *Allensworth: Preserving the Cemetery of "The Town That Refused To Die"* (Nov. 29, 2017) (Master of Arts Thesis, Sonoma State University) <https://scholarworks.calstate.edu/downloads/ng451j09p?locale=en>.

¹⁰ R. Thomas Dye, *Rosewood, Florida: The Destruction Of An African American Community, The Historian* 605–622, [http://users.clas.ufl.edu/davidson/arch%20of%20aa%20life%20and%20culture/Week%2011-14/Dye,%20Historian%20Vol%2058\(3\)%20Spring%201996.pdf](http://users.clas.ufl.edu/davidson/arch%20of%20aa%20life%20and%20culture/Week%2011-14/Dye,%20Historian%20Vol%2058(3)%20Spring%201996.pdf).

scarcity, including water resources under the control of town officials.¹¹ Agriculture was a key component of Allensworth’s financial sustainability. A company that owned and exercised control in agriculture acted to prevent the town from accessing water sources. Subsequently, the community crumbled.¹² A century later, we continue to see how Black communities are deprived of access to clean and drinkable water without methods to localize ownership and management within their own communities.

Decades after the Rosewood Massacre and Allensworth tragedy, studies demonstrated the link between the disregard for Black people’s health and environmental issues based on where Black people lived. In 1987, the United Church of Christ published “Toxic Waste and Race” that demonstrated Black people and other people of color were more likely to live near toxic waste incinerators.¹³ Twenty years later, the United Church of Christ refreshed the study, concluding that communities of color still disproportionately lived near environmentally hazardous areas.¹⁴ We continue to see these trends in the placement of incinerators in Black neighborhoods.¹⁵

Notably, even as Black people face these harms, Black stories of environmental issues have long been underpromoted, along with challenges in engaging decision makers to drive toward solutions. Historically, Black and other communities of color united to advance their stories as a matter of survival because Black people were not welcomed in many traditional environmental spaces.

III. WATER CRISIS IN JACKSON: A PRESENT CATASTROPHE

a. Jackson’s crisis is rooted in historical disinvestment

History is indeed repeating itself. Over the past several weeks, I have spent time in Jackson, Mississippi talking with individuals whose stories feel eerily similar to the intentional deprivation and racial inequities that have harmed Black localities for centuries. Jackson is nearly 83 percent Black, and the student population is also predominately Black.¹⁶ Residents have told me that water issues have now become critical for Black children and their education, as staff of the local school district have spent much of their day flushing toilets instead of teaching. Black health is at risk because dentists and doctors in Jackson must daily contemplate whether they will be able to perform emergency health procedures that utilize water as the foundation of medical care. And Jackson residents have used bottled water for years because it has been normalized as simply what people do. Issues regarding water quality, water pressure, and infrastructure are significantly impacting the lives of Jackson residents.¹⁷

The NAACP heard directly from several community members that they do not believe Jackson receives its fair share when money is allocated for different needs across the State. They also believe this occurs because Jackson is predominately Black. Jackson’s residents have seen first-hand that neighboring communities do not have similar issues affecting water quality. Additionally, the State has continuously tried to take power away from Jackson’s elected Black leadership within its own city. This strategic effort to disempower Jackson residents is nothing new. For example, for almost a decade, in certain city projects, Jackson has sought approvals from a commission that controls projects funded by a one percent sales tax.¹⁸ The

¹¹Erica Rose Thomson, Allensworth: Preserving the Cemetery of “The Town That Refused to Die” (Nov. 29, 2017) (Master of Arts Thesis), Sonoma State University, <https://scholarworks.calstate.edu/downloads/ng451j09p?locale=en>.

¹²Id.

¹³Commission for Racial Justice, United Church of Christ, Toxic Wastes and Race In The United States: A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites (1987), <http://uccfiles.com/pdf/ToxicWastes&Race.pdf>.

¹⁴United Church of Christ, Toxic Wastes and Race at Twenty 1987–2007 (Mar. 2007), https://www.ucc.org/wp_content/uploads/2021/03/toxic-wastes-and-race-at-twenty-1987-2007.pdf.

¹⁵Letter from Lilian S. Dorka, Director External Civil Rights Compliance Office, Office of General Counsel EPA to Keith Harley & Nancy C. Loeb (Jan. 25, 2021) <https://s3.documentcloud.org/documents/20463603/2021-1-25-final-complainant-acceptance-letter-01rno-21-r5.pdf>.

¹⁶United States Census Bureau, QuickFacts Jackson city, Mississippi, <https://www.census.gov/quickfacts/fact/table/jacksoncitymississippi/BZA115220> (last visited Sept. 16, 2022).

¹⁷Chi Chi Izundu, et al., *Jackson water crisis: A legacy of environmental racism*, BBC News (Sept. 4, 2022), <https://www.bbc.com/news/world-us-canada-62783900>; Press Release, NAACP, NAACP President Derrick Johnson’s Statement on Jackson, MS Water Crisis, (Sept. 1, 2022), <https://naacp.org/articles/naacp-statement-jackson-ms-water-crisis>.

¹⁸MS Code § 27–65–241 (2019); Dustin Barnes, *Mayor names picks for 1 percent sales tax commission*, Clarion Ledger, (July 2, 2014), <https://www.clarionledger.com/story/news/local/2014/07/02/tax-commission/12072235/>.

10-person oversight commission has only three seats appointed by its own mayor to advocate Jackson's projects.¹⁹ No other city within the State has had this process imposed to approve infrastructure projects. And, although Jackson has shared with the Governor detailed plans that outline the urgency of its water infrastructure issues for years,²⁰ the Governor rarely, if ever, responds.²¹ Jackson feels like a modern-day Rosewood because the Governor has the ability to help, but has refused.²²

In Rosewood, the Governor knew that, without help, Rosewood would surely burn. And in Jackson, the Governor knows that without funding, Jackson will continue to crumble. Jackson mirrors aspects of Allensworth because water, a critical component of city operations, was intentionally neglected by the State. In Jackson, similar to Allensworth, the State understands the power of water ownership, and thus purposefully has withheld its support from Black residents. A century later, Jackson faces the State's purposeful withholding of funding to improve the quality of water, a valued resource and most important asset of the city.

Currently, the State holds several different Federal allocations of funds and has made it nearly impossible for Jackson, its State capital, to receive funding. Mississippi received almost \$75 million from the State Revolving Fund which is only the first allotment that will be provided over a 5-year period under the Bipartisan Infrastructure Law.²³ And in the midst of the Jackson water crisis, Mississippi built a funding structure that would cap loans for public water systems in the State at \$5 million and loan forgiveness at \$500,000, knowing that it would take billions to fix Jackson's water system.²⁴ Indeed, for cities like Jackson, this will not make a dent for the projects needed to fix its water. And, there is interest on the loans, putting a city like Jackson even further in debt within this funding structure. The EPA released statements that outlined "[a] fundamental principle of the [State revolving funds] is the flexibility provided to States" and stated that "disadvantaged communities can include . . . communities of color."²⁵ But, contrary to building power for Jackson, the Governor used this opportunity to hint at taking even more control away from Jackson, knowing he is building a system where Jackson cannot win.²⁶

The city loan forgiveness maximum and limitations on Jackson funding within the State revolving fund are criteria that Mississippi decided to implement on its own. And to make matters worse, the State submitted this plan during the midst of a water crisis in Jackson. Further, to receive American Rescue Plan funding, each city has to obtain approval from a State department of environmental quality. However, the State passed a law to require only Jackson to obtain a second set of approvals from the Department of Finance and Administration. Rosewood, Allensworth, and other Black cities faced blatant burning and manipulation of resources. Now Jackson is a prime example of depriving Black communities of resources in 2022, this time through direct actions of the State.

¹⁹ Id.

²⁰ Letter from Mayor Lumumba to Governor Reeves regarding need for emergency funding for Jackson's water (Mar. 3, 2021) (on file at NAACP office, Washington, DC); city of Jackson Department of Public Works Engineering Division Memo re: 2022 Infrastructure Legislative Funding Requests (Water/Wastewater) (on file at NAACP office, Washington, DC).

²¹ Sharie Nicole and Quentin Smith, *Lumumba defends city against Reeves' comments about Jackson's failure to produce a water system improvement plan*, WLOX, (Sept. 6, 2022), <https://www.wlox.com/2022/09/06/lumumba-fires-back-against-reeves-comments-about-citys-failure-produce-real-water-system-improvement-plan/>.

²² Chi Chi Izundu, et al., *Jackson water crisis: A legacy of environmental racism*, BBC News (Sept. 4, 2022) <https://www.bbc.com/news/world-us-canada-62783900>; Democracy Now, *Jackson's Water Crisis Comes After \$90M Contract with Siemens to Overhaul System "Ended up a Disaster"*, Democracy Now (Sept. 12, 2022), <https://www.democracynow.org/2022/9/12/jackson-mississippi-water-crisis-flood-treatment>.

²³ Letter from Michael S. Regan United States Environmental Protection Agency to Governors (Dec. 2, 2021) <https://www.epa.gov/system/files/documents/2021-12/Governors-bil-letter-final-508.pdf>.

²⁴ State of Miss. Loc. Gov'ts & Rural Water Sys. Improvements Board, Drinking Water Systems Improvements Revolving Loan Fund, Title 33, Part 13 (FY 2022), https://msdh.ms.gov/msdhsite/_static/resources/17153.pdf; Bracey Harris & Daniella Silva, *Jackson's water system may need billions in repairs. Federal infrastructure funds aren't a quick fix*, NBC News (Sept. 2, 2022 4:55 PM) <https://www.nbcnews.com/news/us-news/jackson-mississippi-water-crisis-infrastructure-funding-rcna45444>.

²⁵ Memorandum from EPA on Bipartisan Infrastructure Law: State Revolving Funds Implementation Memorandum (March 2022), <https://www.epa.gov/system/files/documents/2022-03/bil-srf-memo-fact-sheet-final.pdf>.

²⁶ Governor Reeves Announces Jackson Boil Water Notice Ending, <https://m.facebook.com/tatereeves/videos/2899272590376134/>.

b. Black people continue to bear the brunt of lack of disaster preparedness

Unfortunately, the situation in Jackson is not the first time we have seen Black cities struggle due to lack of support and infrastructure. In Flint, Michigan, the NAACP filed suit because of the gross negligence of officials that failed to detect a water problem. Then when the water crisis was known to harm Black people, the public was told to continue drinking the water, despite knowing it was contaminated.²⁷ In Baltimore, another predominately Black city, E.coli was found in the water as recently as a few weeks ago.²⁸

In my time in Jackson and in talking with individuals who live in predominately Black communities in other parts of the country, one thing is common—lack of preparation before disaster hits communities. And, because the issues are systemic, there is a long history of incrementally poor decisions that leave Black cities debilitated. Residents in Jackson, for example, have continuously said that the State has deprioritized them when it comes to ensuring they can withstand disasters. So it is hard to feel that progress is made when the response from a State Governor in 2022 mirrors the response of the Governor of Florida in Rosewood nearly a century ago.

Despite the promises of the National Environmental Protection Act, the Safe Drinking Water Act, the Clean Water Act, and Title VI of the Civil Rights Act, racial discrimination impacts Black communities.²⁹ The need for the NAACP and other civil rights and environmental and climate justice organizations engaging with communities has only increased. As part of our Environmental and Climate Justice work, the NAACP has built advocacy campaigns, offered technical assistance, and led legal efforts to ensure our communities have representation and tools when disasters happened.

Indeed, Black people have continued to persevere despite seemingly insurmountable barriers. In addition to Jackson residents who live with regular boil water alerts and bottled water within homes, other Black communities across the country are disregarded in similar ways. In 2021, in Lowndes County, Alabama, the Department of Justice investigated whether the Alabama Department of Health and Lowndes County Health Department operated their wastewater disposal program in a way that discriminated against Black people.³⁰ Similarly, the U.S. Department of Housing and Urban Development launched an investigation in Chicago this year in response to the placement of a toxic waste incinerator in a predominately Black and Latino neighborhood.³¹ These investigations demonstrate that the concerns raised in the Toxic Waste and Race reports regarding environmental hazard placements in Black communities persist to this day.

IV. CALL TO ACTION FOR CONGRESS

Congress has the ability to create change. Resiliency is about building power within the residents to sustain themselves.

First, I encourage Congress to pass the Environmental Justice for All Act as an important step to advance community-based solutions to infrastructure and resiliency needs. The Environmental Justice for All Act requires agencies to study and address whether people of color are harmed with new structures and construction, which could prevent future crises impacting communities of color. The law would

²⁷Natasha Noman, *People of Flint Want You to See These Images of the Water They Were Told Was Safe to Drink*, Mic <https://www.mic.com/articles/132732/people-of-flint-want-you-to-see-these-images-of-the-water-they-were-told-was-safe-to-drink>.

²⁸David Collins, *'Abysmal, disappointing': DPW's handling of E. coli water contamination information criticized*, WBALTV 11 (Sept. 15, 2022 6:09 PM), <https://www.wbal.com/article/baltimore-city-council-e-coli-water-contamination-first-hearing/41232055#>.

²⁹Albert Huang, *Environmental justice and Title VI of the Civil Rights Act: A critical crossroads*, American Bar Association (Mar. 1, 2012), https://www.americanbar.org/groups/environment_energy_resources/publications/trends/2011_12/march_april/environmental_justice_title_vi_civil_rights_act/.

³⁰Press Release, Dep't of Just., *Justice Department Announces Environmental Justice Investigation into Alabama Department of Public Health and Lowndes County Health Department* (Nov. 9, 2021), <https://www.justice.gov/opa/pr/justice-department-announces-environmental-justice-investigation-alabama-department-public>.

³¹Brett Chase, *Feds investigating city after civil rights complaint filed by environmental groups*, Chi. Sun Times, (October 20, 2020, 3:53 PM), <https://chicago.suntimes.com/city-hall/2020/10/20/21524989/general-iron-chicago-civil-rights-complaint-environmental-racism-hud-federal-fair-housing>; Brett Chase, *HUD accuses city of Chicago of environmental racism by moving polluters to Black, Latino neighborhoods*, Chi. Sun Times (July 19, 2022 4:28 PM), <https://chicago.suntimes.com/2022/7/19/23270084/hud-civil-rights-general-iron-polluters-black-latino-neighborhoods-lightfoot>.

also expand agencies' ability to address historical racism and disinvestment in Black and other historically excluded communities, among other solutions.

Next, this committee has a unique role in oversight. I encourage this committee to exercise its authority to assess the effectiveness of State oversight in historically disadvantaged communities when there is an immediate need in to obtain resources for disaster preparedness or response.

Third, there must be better information gathering to allow for accountability. Some environmental justice data sets contain only high-level data regarding pollution in communities of color. The data contains incomplete information regarding water pollution and safe drinking water. These data sets could be improved by offering more granular and disaggregated data to allow communities to better understand pollution impacts and populations that are affected. To be effective, data must be disaggregated to allow for assessment of the influence of race, age, disability, and neighborhood information.

Fourth, many of the resources that exist for disaster preparedness come in the form of loans, but for individuals and communities already fighting centuries of infrastructural racism, like Black communities, these funds do not promote equity. To achieve the goal of wide-spread community resiliency, we should diversify the way that we allocate funds for critical infrastructure and disaster planning. This diversification must also include more direct funding to cities and towns, prior to a disaster.

Next, there are constraints on the private right of action to enforce Title VI of the Civil Rights Act of 1964.³² It remains a challenge for individuals within communities impacted by discriminatory government actions to hold their governments to account. Lowering these barriers will only strengthen the ability of communities to ensure they can hold culpable entities responsible.

Additionally, there must be more information and opportunities for technical assistance to communities that need it the most. We applaud the EPA for recently opening grant applications for technical assistance centers within communities. However, communities like Jackson and other historically disadvantaged communities should be prioritized to account for historic neglect. And we encourage agencies who are offering technical assistance to ensure the assistance is the right match for the community. For example, a community may be at the implementation phase. The technical assistance needs to reflect their needs at the moment.

Next, there must be more interagency collaboration on the Federal level when it comes to disaster preparedness. Currently, communities like Jackson are left trying to figure out which agency addresses parts of their crisis. It is nearly impossible to understand the information, which delays disaster planning efforts. Developing a single website to convey disaster preparedness resources and immediate response platforms would help cities to obtain the assistance they need when building their plans. Indeed, many cities would more easily be able to outline specific needs with this level of collaboration and coordination.

The NAACP has advocated on behalf of Jackson with the Environmental Protection Agency. We have highlighted discriminatory conduct by the State of Mississippi under Title VI of the Civil Rights Act. We have documented the egregious condition of Jackson's water system and we have urged the EPA to investigate how the actions of State actors have caused discriminatory impacts and harm. We encourage the EPA to bring justice to the people of Jackson, but action from Congress and the entire Federal Government is needed to avoid similar crises in other communities.

We have made strides in the environmental and climate justice space. However, history will continue to repeat itself if we do not learn from our past. It is disheartening that the crisis in Jackson resembles historic injustices in Rosewood, Florida and Allensworth, California as well as the recent water crisis in Flint, Michigan. We need urgent action to ensure that this Congress is remembered as the body that helped break the cycle.

Chairman THOMPSON. Thank you very much.

The Chair recognizes the Ranking Member for introduction of the next witness.

Mr. KATKO. Thank you, Chairman Thompson.

I am proud to introduce John O'Connell III, senior vice president of the National Rural Water Association, who will soon fill the role

³² See *Alexander v. Sandoval*, 532 U.S. 275 (2001); Amna Nawaz, *How Jackson, Mississippi's water crisis is a sign of larger racial inequities*, PBS News Hour (Sept. 12, 2022 6:30 PM), <https://www.pbs.org/newshour/show/how-jackson-mississippi-water-crisis-is-a-sign-of-larger-racial-inequities>.

of president effective September 27 of 2022. That is a daunting task for sure.

Mr. O'Connell is a New York State water and wastewater systems operation specialist who began his career in 1988 with the Village of Weedsport, a small town in my district. He has served as superintendent or chief operator for the village of Weedsport, the city of Cortland, and the town of Throop since that time. In his career Mr. O'Connell has overseen many improvement projects on both water and wastewater systems and has been instrumental in ensuring the operational and financial success of the upgrades.

John also joined the board of directors of the Newark Rural Water Association in July 1997. He has served as secretary, treasurer, vice president, and president of that association.

This is just a brief summary of Mr. O'Connell's many accomplishments, but based on his vast experience his insights will be valuable today when we talk about these issues. I thank Mr. O'Connell for his continued services to his communities and I am very pleased to have him testify today.

Thank you, Mr. Chairman.

Chairman THOMPSON. Thank you very much.

The gentleman is recognized to summarize his statement for 5 minutes.

**STATEMENT OF JOHN O'CONNELL, III, SENIOR VICE
PRESIDENT, NATIONAL RURAL WATER ASSOCIATION**

Mr. O'CONNELL. Thank you.

Good morning, Chairman Thompson, Ranking Member Katko, and Members of the committee.

As Mr. Katko said, I am John O'Connell, vice president of the National Rural Water Association, the largest public water and sanitation utility organization, representing more than 31,000 water and wastewater utilities Nation-wide.

I am also an active farmer, upstate New York, and I continue to serve as a certified water and wastewater system operator for small rural communities on a part-time basis.

It is an honor to appear before you today to discuss critical water infrastructure preparedness and resilience.

Before I proceed, I would like to give credit to a few of our State associations on an issue that Chairman Thompson is currently addressing. The Mississippi Rural Water Association has been on the ground working to restore and maintain critical water and wastewater service in Jackson, Mississippi. Volunteers from other State associations include Georgia, Florida, Alabama, South Carolina, Ohio, and Maryland. They all came to assist in the efforts. These certified operators provided direct assistance to restore operations, locate service lines, install new taps necessary to disinfect the system. These services were provided at not cost to the city.

National Rural Water Association and its 50 State Rural Water Association affiliates are governed by 350 volunteer directors selected from these very water systems associations in the Nation. We have more than 750 professional workers in the field, we have boots on the ground working 24 hours a day, 365 days a year, reaching across a nation with all 50 States, including Tribes and U.S. territories.

As we all know, water utility preparation and resilience are vital to America and the Nation. According to the U.S. Environmental Protection Agency's Safe Drinking Water Information System, there are currently 50,000 community water supplies in the country, 91 percent of them of which serve populations of less than 10,000, 60 percent of them which serve populations of 500 or fewer. The current public health crises in Jackson, Mississippi, the COVID-19 pandemic, the historic drought conditions plaguing the Western States as we speak, all highlight one essential fact, continuity of safe drinking water service and wastewater treatment is essential to modern life and the economy. This fact particularly occurs in small, rural, Tribal, and disadvantaged communities across the country, which we have heard.

I mentioned at the top of my remarks that I am part-time for the simple fact that many small and rural simply cannot afford certified operators. I have been in the wastewater and water industry serving small communities for 34 years, and it is imperative to understand that small communities only operate to serve the public interest and are eager to take all feasible and necessary actions to protect our public drinking water supplies.

I want the committee to know that when small towns like mine need help in operating our water utilities, understanding new and complex Federal Clean Water Act and Safe Drinking Water Act requirements, receiving the required training to maintain our licenses, and learning about the latest preparedness and resiliency practices, we call our State Rural Water Association and ask for technical assistance. These professionals travel directly to our town and focus on specific water utility issues. For over 40 years, they have been essential to almost every small and rural community in New York and across the country.

However, the reality for many small and rural water and wastewater systems is that financial and human capacity limitations exist which impact their preparedness and resilience. With smaller economies of scale combined with lower-income residents, providing safe, affordable, and sustainable service can become challenging. Just a note on that, right now Nation-wide we are facing a mass reduction in utility directors. I believe it is 50 percent Nation-wide of people who are going to retire in the next 3 to 4 years, 75 percent in New York State.

Many of these small systems rely on the user rates paid by their customers to entire operation including debt service loans, paying staff, equipment, disinfection products, and energy costs. In addition, as inflation has hit all Americans, small and rural utilities are not immune. Disinfection chemicals to preserve public health, the increase in cost in just chemicals alone are 300 percent, forcing some rural utilities to pass on the costs to their lower-income customers that are already struggling financially.

As the committee considers options to consider this critical infrastructure and water sector, the National Rural Water Association suggests preparedness and resilience assistance—establish competitive grant programs with the DHS to include activities to assist small and rural communities with preparedness and resilience assistance. Respond to our rural water associations, natural disas-

ters, and extreme weather incidents are increasing as we just heard today.

As of now, these efforts are limited to recovery and restoration activities. Assistance should be expanded to include preparedness and resiliency, potentially include the loss of services.

Priority could be targeted to vulnerable communities and activities could include but not be limited to conducting assessments of critical infrastructure with suggestions of modifications necessary to harden utilities performing resiliency and mitigation planning and to include direct application assistance to access available State and Federal funding.

Disaster recovery planning: Disaster recovery planning could include training, establishing emergency response plans, communication protocols, hazard recognition, and enhancing staff evaluation skills. National Rural Water recommends DHS fund direct emergency technical assistance to restore services including pumps, motors, evaluation and repair, water disinfection, flushing, leak detection, line repair, water main and valve location, emergency power generation, bypass pumping, water treatment, and maintenance safety measures during difficult working conditions. Application assistance should also provide to access State and Federal funding, including FEMA and insurance recovery claims.

Chairman THOMPSON. Will the gentleman wrap up his statement please?

Mr. O'CONNELL. I will. Let me switch my page.

Again, we are eager to partner with DHS in assessing the needs of every small water utility. Together, we provide the expertise to ensure all necessary protective actions are conducted in a timely manner, resulting in a more resilient, prepared, and secure water sector.

Thank you for the opportunity to testify before you.
[The prepared statement of Mr. O'Connell follows:]

PREPARED STATEMENT OF JOHN O'CONNELL, III

SEPTEMBER 21, 2022

Good morning, Chairman Thompson, Ranking Member Katko, and Members of the committee. I am John O'Connell, the senior vice president of the National Rural Water Association (NRWA), the largest public drinking water and sanitation utility organization representing more than 31,000 water and wastewater utilities Nationwide. I am also an active farmer in up-State New York, and I continue to serve as a certified Water and Wastewater Systems operator for a small rural community on a part-time basis.

It is an honor to appear before you today to discuss Critical Water Infrastructure Preparedness and Resilience. I must first thank the committee for providing this important opportunity to highlight water and wastewater utilities, one of the Nation's 16 critical infrastructure sectors. These lifeline community services are often overlooked.

Before I proceed, if you will indulge me, I would like to give credit to a few of our State associations on an issue that Chairman Thompson is currently addressing. The Mississippi Rural Water Association has been on the ground working to restore and maintain critical water and wastewater service in Jackson, Mississippi. Volunteers from our State associations in Georgia, Florida, and Alabama all came to assist in this effort. These certified operators provided direct assistance to restore operations, locate service lines, and install new taps necessary to disinfect the system. These services were provided at no cost to the city.

The National Rural Water Association and our 50 State Rural Water Association affiliates are governed by over 350 volunteer directors elected from these very water systems across the Nation. We have a cadre of more than 750 water professionals

working in the field. We have boots on the ground, working 24 hours a day, 365 days a year, reaching across the Nation in all 50 States including Tribes and U.S. territories.

As we all know, water utility preparedness and resiliency are vital to rural America and the Nation. According to the U.S. Environmental Protection Agency's Safe Drinking Water Information System, there are currently 50,000 community water supplies in the country, 91 percent of which serve populations of less than 10,000 and 60 percent of which serve populations of 500 or fewer. The current public health crises in Jackson, MS, the COVID-19 pandemic, and the historic drought conditions plaguing the western States as we speak, all highlight one essential fact: Continuity of safe drinking water service and wastewater treatment is essential to modern life and the economy. This fact is particularly acute in small, rural, Tribal, and disadvantaged communities across the country.

The COVID-19 pandemic, in particular, demonstrated the vital nature of reliable drinking water and wastewater infrastructure. Over the past 2½ years, Americans have learned to live and work in these trying times, and despite the extraordinary risks, the over 31,000 utility members of the National Rural Water Association worked every second of every day to provide uninterrupted water services as scientists advised hand washing to be a fundamental, frequent action to "Stop the spread."

Although small and rural communities faced unprecedented challenges like reduced revenues, personnel shortages, shutoff moratoriums, customer job loss, increased costs for personal protective equipment, and reductions in general economic activity, all types of water and wastewater utility system operators, circuit riders, specialists, technicians, and locally-elected officials heeded their collective "call to action" and accepted the critical responsibility of providing the public with drinking water and wastewater treatment.

It is important to note that the U.S. Department of Homeland Security (DHS) designated our water and wastewater utilities as critical infrastructure and the U.S. Environmental Protection Agency and U.S. Department of Agriculture have designated our water and wastewater specialists, employed within every State rural water association, as "essential personnel" to maintain daily, uninterrupted services of running water and wastewater treatment.

Due to the qualifications, training, licenses, expertise and relentless dedication of rural water operators, America's economy has been able to stay resilient in the face of this scourge and rural Americans continue to depend on their clean, affordable water and wastewater service every day. It is fitting that these unsung heroes receive the recognition they have earned and deserve.

I mentioned at the top of my remarks that I am part-time for the simple fact that many small and rural systems simply cannot afford full-time certified operators. I have been in the water and wastewater industry serving small communities for 34 years, and its imperative to understand that small communities only operate to serve the public's interests and are eager to take all feasible and necessary actions to protect our public drinking water supplies.

I want the committee to know that when small towns like mine need help in operating our water utilities, understanding new and complex Federal Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) requirements, receiving the required training to maintain our licenses, and learning about the latest preparedness and resiliency practices, we call our State rural water association and ask for technical assistance. These professionals travel directly to our town and focus on our specific water utility issue. For over 40 years, they have been essential to almost every small and rural community in New York and across the country.

However, the reality for many small and rural water and wastewaters systems is that financial and human capacity limitations exist which impact their preparedness and resiliency. With smaller economies of scale combined with lower-income residents, providing safe, affordable, and sustainable service can become challenging. Many of these small systems rely solely on the user rates paid by their customers for the entire operation including debt servicing loans, paying staff, equipment, disinfection products, and energy costs. In addition, as inflation has hit all Americans, small and rural utilities are not immune. Disinfection chemicals to preserve public health have increased by approximately 300 percent, forcing some rural utilities to pass on the costs to their lower-income vulnerable customers that are already struggling financially.

As this committee considers options to address the critical infrastructure of the water sector, the National Rural Water Association suggests:

1. Preparedness and Resilience Assistance

Establishing a competitive grant program within DHS to include activities to assist small and rural communities with preparedness and resilience assistance. Responses by our State rural water associations to natural disasters and extreme weather incidents are increasing. As of now, these efforts are limited to recovery and restoration activities. Assistance should be expanded to include preparedness and resiliency, potentially reducing the loss of services.

Priority could be targeted to vulnerable communities and activities could include but not be limited to conducting assessments of critical infrastructure with suggestions for modifications necessary to harden the utility and performing resiliency and mitigation planning to include direct application assistance to access available State and Federal funding.

2. Disaster Recovery Planning

Disaster recovery planning should include training, establishing emergency response plans, communication protocols, hazard recognition and enhancing staff evaluation skills.

NRWA recommends DHS fund direct emergency technical assistance to restore services including pump and motor evaluation and repair, water disinfection and flushing, leak detection and line repair, water main and valve location, emergency power generation, bypass pumping, water treatment, and maintaining safety measures during difficult working conditions. Application assistance should also be provided to access State and Federal funding including FEMA and insurance recovery claims.

3. Cybersecurity

The two recent water cyber attacks in Florida and Kansas indicate that small communities can be a target of cyber criminals. For small and rural communities to increase their preparedness and resiliency, NRWA has advocated to implement a National collaborative cybersecurity water supply protection initiative through DHS, which would result in communities focusing on enhancing security based on local risks.

Only local experts knowledgeable of the individual systems can identify the most vulnerable elements in the community and detect immediate threats. This initiative could provide funding to rapidly assess the efficacy of all small water utilities in protecting their cyberinfrastructure, develop reasonable protocols to enhance protection, provide assistance to any inadequate cyber protection plan, and document the state of the cyber protection in all small water supplies.

Again, we are eager to partner with DHS in assessing the needs of every small water utility. Together, we can provide the expertise to ensure all necessary protective actions are conducted in a timely manner—resulting in a more resilient, prepared, and secure water sector.

Thank you for the opportunity to participate today and I stand ready to take any questions that you may have at this time.

Chairman THOMPSON. Thank you. We will make sure that your entire statement is included in the record.

I thank the witnesses for their testimony.

The Chair reminds each Member that he or she will have 5 minutes to question the witnesses.

I now recognize myself for questions.

It is imperative in this country that the Federal, State, and local governments to pursue and implement policies that strengthen the resilience of our Nation's infrastructure and lower our collective vulnerability to climate impacts. Each one of you have kind-of talked about that in your presentation. This acknowledgment should be regardless of race, ethnicity, economic status, urban or rural.

So for our witnesses, given that this is National Preparedness Month, what are some areas that FEMA and the broader government can do to ensure that we implement policies that ensure that all communities have the resources they need to strengthen their preparedness and resiliency?

We will start with you, Mr. Fugate.

Mr. FUGATE. Thank you, Mr. Chairman.

Administrator Criswell has already begun to implement many policies that are being directed by the White House to address equity. But probably one—and, Mr. Chairman, you have been hearing this before—when we talk about things like mitigation, we always focused on the cost-benefit analysis, where every dollar we invest we save future losses of anywhere from \$4–9, and that sounded a really good answer. It was easy to communicate to the committee when you are making those investments, well this is going to save the taxpayers money. But it had a dark side. That was if you take it out to the extent of for every dollar I am investing, where do I get my greatest cost-benefit analysis? It tended to drive the investments in the more affluent communities. The house is more valuable, the infrastructure is greater, generally you saw more economic activities there. Because we had focused so much on the cost-benefit analysis as expressed in dollars not in impacts to people, the bias was always going to direct it away from the greatest need.

I think Administrator Criswell and her team are looking at how do we back away from merely looking at a transactional description of deciding where to make investments and start looking at the functional impacts of these investments upon people, aging infrastructure, and communities at greater risk that generally have the least resources to successfully recover from disaster. These are important first steps, but I think we have to understand how we got here, what we can do differently, and then really embrace this idea that what we invest in has to be for the future risk, not what we have always dealt with in the past.

Chairman THOMPSON. Thank you.

Mr. Gadis.

Mr. GADIS. Thank you very much.

Your question is a fantastic question and how I would answer that is to lift the burden off of low-income households and the local utilities that serve them. The Federal Government must invest more in our Nation's water infrastructure. Critically, the Federal Government must also place water infrastructure on par, if not higher, than funding that is provided for other infrastructure throughout the country.

Congress and the Biden administration have made great strides toward this goal with the passage of the recent legislation, the Infrastructure Investment and Jobs Act, which will provide the EPA with \$55 million over the 5 years to improve the Nation's water infrastructure. These actions are imperative to our country to fight for clean water access for all, but unfortunately, it doesn't go far enough. I think that we have all spoke to that today as well.

While these funding programs help shift efforts in positive directions, they do not provide nearly enough financing to solve the growing issue that we have at hand in the front of us today. According to American Society of Civil Engineers of the United States, we face a water infrastructure funding gap of \$1 trillion—\$1 trillion is what the estimated gap is today. Much of this investment is needed to be met not with individual customers, but a dramatic increase in the Federal investment.

A number of the utilities throughout—I am sorry.

Chairman THOMPSON. We got it, we got it. Thank you very much.
Mr. GADIS. OK. OK.

Chairman THOMPSON. I got two more people. I got a minute left.
Ms. Conner.

Ms. CONNER. Thank you.

One of the things that would help and what I have heard directly from communities that have been historically disadvantaged, is that technical assistance needs to be meaningful for what they are facing and reflect their needs at that moment. The technical assistance often that is given to them is not what they actually need then. So really thinking about what technical assistance needs to look like in those communities.

Next there needs to be more disaggregated data. I think that all of the Federal agencies can play a major role in ensuring that there is disaggregated data so that communities know what is actually happening.

Next I believe that collaboration, even though we are focusing on FEMA, but FEMA needs to be collaborating and coordinating with other agencies. Oftentimes there are communities who are historically disadvantaged and they are trying to figure out which agency they need to turn to in order to receive help. So the more that FEMA and other Federal agencies are working together, the easier it is for those communities to get the assistance that they need.

Next, while it is important for all communities to be a part of this conversation, there does need to be a prioritization of historically disadvantaged communities because we know that there has been centuries of disinvestment in those communities as well.

Chairman THOMPSON. OK.

Mr. O'Connell.

Mr. O'CONNELL. Great points.

As I said, National Rural Water Association is one of the few nonprofit organizations that does offer assistance to each community. We have boots on the ground, so to speak. We go to you. You don't need to come to us, we go to you. The complexity of FEMA and making out applications and everything is where I think the problem is. A lot of help that is desired where the utilities have really not people on staff, especially in rural areas, that can get through the paperwork part of it. We are trying to improve that. We need more funding to get more people on the ground to go into these disaster areas—we are doing it now, but with limited resources—to help them go through the process of expediting the problems and to get them answered quickly and get these processes in line so that they can get funding.

Honestly, I think that is the biggest thing we need, is communication, help with rural communities to administrate how they get through the process. That becomes technical assistance with people on the ground.

Chairman THOMPSON. Thank you very much.

The Chair yields to the Ranking Member for questions.

Mr. KATKO. Thank you, Mr. Chairman. I thank all of you for your testimony. It is something that has been very frustrating to me for many, many years, but I have got to say, Ms. Conner, what you talk about with respect to Jackson and what I have learned from the Chairman, it is an utter outrage. How does a city that

size not get the funding that is sent to the States on a routine basis to help them shore up their systems, No. 1? No. 2, how do those leaders let that happen? How does that happen, right?

So, Mr. Chairman, in my opinion, we should use what precious time we have left this term to bring some of those people up here so we can ask them themselves, how do you let this happen? Maybe we can learn the details of possible racism involved, obvious incompetence and malfeasance, and make sure that we fashion things going forward that are worthwhile.

These people shouldn't be let off the hook. They have let the people of Jackson down, the people in Mississippi down, just like they did in Flint. After Flint, how do we let another Flint happen? That is outrageous.

So I would love to talk to you more about it, but I have got other things to talk about. But I wanted to make sure I acknowledge you.

Mr. GADIS, real quickly, if I may, you kind-of touched on it a little bit, the infrastructure bill we passed, quite proud of. Expended a lot of political capital on that one, but it was worth it. But I am wondering how much it has helped the water systems or how much it is going to help the water systems going forward from a security standpoint and from an infrastructure standpoint.

If you could just tell me briefly, what you think in that regard.

Mr. GADIS. Well, I think it is a step in the right direction. It is without a doubt not a myth. There is more money needed. But also what is needed is to make sure that the money is going to the right communities. It shouldn't just be spread out and go to communities that have a young system. You know, here in the District of Columbia more than 80 percent of our water system, or the pipes, are near their age of needing to be replaced. So you have to make sure the money is going to the right place. It is a step in the right direction, but it does have shortfalls without a doubt.

Mr. KATKO. All right. Thank you very much.

Mr. O'Connell, now to juxtapose those big cities, I know very well from my district and many rural districts how much they struggle. So in your testimony you outlined the financial and human capacity issues that some rural communities face. You also mentioned that some of these utilities were forced to pass on additional costs to rate payers who can't afford them. You have run a similar system. If a small utility wanted to enhance the resiliency to protect their customers from weather-related incidents, how would they absorb this cost without devastating lower-income communities? How do you do it?

Mr. O'CONNELL. We cut back. As I noted, I am a part-time employee there and we simply have to cut back. We have to use DPW workers to help us and—to even come close to that. I mean the chemical cost alone has got to be passed on to the consumer. There is no other way to dodge that bullet.

As far as the labor force goes, we even use some sheriff department help on doing some hydrant maintenance and stuff of that nature. We try to get some summer help part-time. We are doing everything we can to alleviate the cost of increasing our cost to our customers. We do everything we can.

As far as the infrastructure goes, the biggest thing—and I see what is happening in the—the money is great, the backlog right

now is deliverables on supplies and also because of the American Act, we can't—these communities can't get materials. So that has been an obstacle.

But to answer your question, yes, Mr. Katko.

Mr. KATKO. Thank you very much.

Mr. Fugate, I want to touch base with you on something different, something that is very concerning to me. That is the cyber vulnerabilities. We have vulnerabilities in cyber Nation-wide and I think it is the biggest threat to our country right now. Five years ago I would have said ISIS-inspired acts of violence, now I think one of the greatest threats to the homeland is cyber. Certainly it is in the water systems.

Could you summarize for us briefly some of your concerns with respect to cyber and what we can do about it?

Mr. FUGATE. Well, I think, you know, the first thing is—and I think, you know, reasonably with the invasion of Ukraine, we are no longer dealing with cyber hackers, we are dealing with nation sponsorship. This is pure adversaries. They are no longer looking merely at causing chaos, they are actually looking at how they could disrupt National security, our ability to mobilize, our economies, and our confidence in Government.

I serve on a board of a major utility and across all of these infrastructures, cyber threats are at the foremost and it is far greater than ransomware.

So, again, I think the work that CISA does at DHS, the information that is going out, this is an active threat. You know, in my world I look at two things that have changed dramatically in my career—cyber and climate. Neither were things we were planning for when I started my career and now they are at the pinnacle of the risk to our Nation.

Mr. KATKO. Thank you, Mr. Chairman.

I yield back.

Chairman THOMPSON. The gentleman yields back.

The Chair recognizes the gentleman from New Jersey for 5 minutes, Mr. Payne.

Mr. PAYNE. Thank you, Mr. Chairman.

Mr. Gadis, we are seeing a wave of cyber attacks cripple major parts of our Nation's critical infrastructure, pipelines, chemical plants, manufacturers, and meat packers. Last year a hacker gained access to a water treatment plant in Oldsmar, Florida and was able to change the chemical settings in a way that it if undetected would have poisoned the local water supply. While the water crisis in Jackson, Mississippi was not caused by a hacker, it demonstrates the damage that water system failures or disruptions can cause.

Mr. Gadis, are incidents like the one in Oldsmar, Florida or the more recent ransomware attack that crippled the South Staffordshire Water Company in the United Kingdom, driving stronger cybersecurity practices within the water sector?

Mr. GADIS. I am sorry, I didn't hear the last part of your question. I apologize. The very last part.

Mr. PAYNE. That is OK. So would you consider those to be driving stronger cybersecurity practices within the water sector because of those incidents?

Mr. GADIS. Well, it is a great point that you make. The cybersecurity is very, very important I think in the water sector. It is very much similar to the infrastructure. The costs are outrageous for utilities to continue down the path that we are continuing down today to keep the utilities safe.

We at D.C. Water do everything that we can. I think we are in a better position than a number of other utilities throughout the country in which we—on a day-to-day basis we are looking at cyber, we are looking at the attacks. We have a number of threats that come through our system on a day-to-day basis. But at the end of the day, the utilities are very prone to cyber attacks and it is something that we have to continue to build up. We have to continue to work I think with the Federal Government, with EPA, and others to find funding for cyber as well.

Mr. PAYNE. Thank you.

Mr. GADIS. Thank you.

Mr. PAYNE. CISA offers a variety of programs and services to help critical infrastructure owners and operators in all sectors, including water, help to shore up your cybersecurity defenses.

Mr. Gadis, has D.C. Water taken advantage of any of the CISA free cybersecurity services?

Mr. GADIS. Yes.

Mr. PAYNE. Or partner with CISA through programs like CyberSentry or Joint Cyber Defense Collaborative?

Mr. GADIS. Yes, we do. We actually sit on a number of those different organizations, on the boards or on the committees and working with them. We take full advantage of all of the cybersecurity expertise that we can get from these organizations, including the EPA and many others regarding cyber.

So the answer is yes to your question.

Mr. PAYNE. Thank you, sir.

To my colleagues, if your districts haven't taken advantage of the CISA programs, I would suggest that you take a look at them.

With that, Mr. Chairman, I yield back.

Chairman THOMPSON. The gentleman yields back.

The Chair recognizes the gentleman from Louisiana for 5 minutes, Mr. Higgins.

Mr. HIGGINS. Thank you, Mr. Chairman. Appreciate you having this hearing today.

It has been startling observing what has been happening with the water quality in the capital of one of our sovereign States, my neighboring State, Mississippi. My wife is from Mississippi. We are familiar with Jackson. My observation during the course of my life is obviously south Louisiana, we have to deal with a lot of water. We have hurricanes and we have—you know, we have a lot of coastal land, the Gulf of Mexico, we have heavy rains, dealing with flood issues and preparations for flood mitigation and the expenditures required and the focus and the discipline of our local elected officials to prepare the next generation for major water events and to provide quality water for our citizenry. This is largely the role of local elected officials and my observations have been that the quality and effectiveness of water and drainage in our municipalities directly reflect the quality and effectiveness of the leadership in those municipalities.

I think Mr. Gadis could perhaps address this question. Why would one municipality that shares a common geographical region with other cities of similar size and funding revenue, why would one municipality be effective at dealing with water and another not?

Mr. GADIS. Well, each utility has its own differences, trust me. Even the proximity of some of those utilities, they can get sometimes totally different types of rainfall. So, for example, you know, you talk about a 15-year rainfall, a 15-year-flood type rainfall, we have had that happen in the District of Columbia on three or four different occasions in the past 2 years.

Mr. HIGGINS. Yes, sir.

Mr. GADIS. So as a result of that, I think each utility has also spent their money in different places as well. I think that is what it boils down to.

Mr. HIGGINS. Don't you think water quality is sort-of a cornerstone of—to be able to recover from anything? It would seem that we have an example in south Louisiana, I had personal experience with my father after he retired, did some work as a consultant engineer for Jefferson Parish in the 1970's. In Louisiana we have parishes, the rest of the country has counties—same thing. Jefferson Parish was installing and upgrading very advanced drainage and pumping systems. That was based upon, I believe, a 1976 Corps of Engineers study that indicated that major water events could end in—like a category 5 hurricane or if you had a rupture of the levee or something could cause major flooding in Jefferson Parish and/or Orleans Parish. See, neighboring parishes in Louisiana—during the course of the 1970's and the 1980's, Jefferson Parish was very effectively run and they installed state-of-the-art pumps and drainage and Orleans Parish was very poorly run and they didn't. So Katrina came and neighboring parishes had vastly different experiences.

To me you are the expert on this particular topic.

I care about my colleague's territory in Mississippi and I stand by as your neighbor, Mr. Chairman, to help in any way that we can to address this at the Federal level, including perhaps sharing best practices from some of your colleague citizens and municipalities in Louisiana.

But, Mr. Gadis, what would you suggest would be the first course of action? I give you my remaining 30 seconds, sir. What should the municipality of Jackson do to immediately respond to this?

Mr. GADIS. Well, I think it is hard to talk about Jackson itself. I think that as it unfolds we will figure out and find out more information.

In my experience and my history in this industry, that is what happens. I think we should not be quick to take a look at this and say here is what I will blame or whatever. That is going to take time. This is something I think that has happened over a number of years and also different leadership.

Mr. HIGGINS. Yes, sir.

Mr. GADIS. You pointed to that earlier about leadership. That is a key factor in I think operating and managing a utility as well.

Mr. HIGGINS. Thank you, Mr. Gadis.

Thank you, Mr. Chairman. I yield.

Chairman THOMPSON. Thank you. The gentleman's time has expired.

The Chair recognizes the gentleman from Missouri, Mr. Cleaver, for 5 minutes.

Unmute yourself, Mr. Cleaver.

Mr. CLEAVER. Thank you, Mr. Chairman. I apologize. I was off the grid for a minute. Thank you very much.

I want to zero in if I could please on the tragedy down in Jackson, Mississippi, because I have come to the conclusion—I read somewhere that the love of money and keeping it from addressing the needs of poor people is the root of all evil. So, you know, you have a lot of evil going on around the world.

I would like for our panelists to address, particularly FEMA, in terms of preparedness, are there systems around the country right now that are in as much difficulty and as much degradation as we have seen in Jackson, Mississippi?

Mr. FUGATE. Yes, sir. It is just a matter of time until they fail or we have another disaster.

A lot of the things we go to are a result of what I call the resiliency divide, where we haven't had the investments made, we are not maintaining the systems, there is not the economics to do that, you know, from where I am at in north Florida. Where I grew up, you know, it is hard for communities like Worthington Springs to compete with the city of Miami when they are going for grants. It is one of the things that FEMA is trying to make sure, is making sure that we level that playing field, so it isn't just people with the professional staff full-time resources and go get the money. Because if we are not making our investments across the Nation based upon impacts and needs, we will continue to grow our resiliency divide between the haves and the have-nots. Where I am at in North Florida, big communities will probably get the grants. Vulnerable communities that sit on rivers and streams that will impact their systems, as we saw back in 1998 when we had flooding across the State, the ones that got wiped out were the small jurisdictions who didn't have the resources to build higher and they had total failure, which then cost us more to the taxpayers, because we were dealing both with the response and the rebuilding.

Mr. CLEAVER. I am also concerned about this \$8 million threshold, which small communities have to meet in order to get a response from the Federal Government and some kind of declaration of emergency from FEMA. So it fits in with what you were just saying in terms of the smaller communities. I have got to—and I don't like to—it hurts me to—painful for me to say, but also communities that are of color. Is there a need for us to maybe spend time trying to make corrections in our policies so that smaller communities and communities of color are not ignored?

The reason I say that is, you know, the smaller communities are not entitlement cities in terms of the way the Federal employment comes in. I mean, for example, I live in Kansas City, Missouri, it is the largest city in our State. So you will have the resources. But let us say a little smaller town, like Orrick, which probably nobody has heard of, which was hit by a tornado, ended up without receiving much attention and no money from the Federal Government at all. But, you know, obviously we cannot leave this to the whims of

Congress because we are not acting. So maybe we need to do something with the way FEMA is constructed so that we can proactively deal with some of these, especially now that we have this infrastructure money. I am with the Ranking Member—I don't know how anybody could vote against it.

But, anyway, I don't want to over-talk and get a response from you.

Mr. FUGATE. Well, representative, I would refer this back to FEMA. I think it may be useful for the Chairman to ask FEMA to come in and brief on how Administrator Criswell is addressing this and try to make sure particularly in the building resilience and infrastructure communities that FEMA is providing—you know, Congress is providing billions for pre-disaster mitigation. The steps we are taking to address these very issues, to make sure that the money doesn't go to the ones that always get it, that we are looking at rural America, we are looking at Tribal governments, we are looking at impacts to people, and how they are doing that.

Mr. CLEAVER. Thank you.

I yield back, Mr. Chairman. I ran out of time.

Chairman THOMPSON. Thank you very much.

We have had a talk with the FEMA administrator. She is, as you say, well aware of it—actually in the middle of trying to come up with new policies to address just what Representative Cleaver is talking about, and a lot of other communities that are impacted.

The Chair recognizes the gentleman from Mississippi, Mr. Guest, for 5 minutes.

Mr. GUEST. Thank you, Mr. Chairman. To all our witnesses, thank you for being here on this very important topic.

The city of Jackson is a city that I along with Chairman Thompson both represent. We have both been in meetings with elected officials, State elected officials, city elected officials. Our offices have been in contact with Federal and State agencies and are currently working to try to find solutions to this problem. I know many of you referenced our capital city in your reports that you provided prior to your testimony here today.

Mr. Fugate, I want to ask you, I know you referenced the city of Jackson. You talked about both flooding and preexisting conditions that may have been a factor. Are you familiar with the city of Jackson? Have you been briefed or received any information specifically on the current crisis that is currently being mitigated? Or are you just aware from media reports that you have received?

Mr. FUGATE. Media reports and some discussions with various staff, but I have not been directly involved, nor have I been briefed on the specifics.

Mr. GUEST. What information are you aware as far as the pre-existing conditions that may have existed? I know generally you talk on the final page of your written testimony about—and again I don't know if this is specifically to Jackson—you talk about aging infrastructure, poor financial health, delayed maintenance, low staffing, lack of training. Those things that you all list would increase the likelihood of a system failure. Do any of those—are those applicable to the water system failure in the city of Jackson?

Mr. FUGATE. Well, based upon the reports, they were having water quality issues before the flooding. So that—actually that

statement didn't come from Jackson, that was basically looking at the American Waterworks Association and what are indicators or risk they see across the Nation in water systems. So this is much more wide-spread than just looking at what happened in Jackson.

Mr. GUEST. Let me specifically—and again, with me representing a portion of the capital city, I want to continue to talk specifically about the city of Jackson—this was an article published by the *Mississippi Today*, one of our local media outlets on August 31. It says Feds flag dire Jackson water problems a month before the system failure. Our water system in the city of Jackson has been under an EPA consent decree since 2013. There was a follow-up decree that was later entered into I believe in 2021 if I am not mistaken between the city of Jackson and EPA. Then there was a report that EPA published in July of this year, just a few ultimately weeks before the failure of the Jackson water system. These were some of the things that were cited in that EPA report: Poor administration, lack of staff, it said operator turnover is high with some reporting working 75 hours a week without overtime pay. The report talks about finances are in shambles. It said the city was unable to provide a complete list of customers when inspectors visited and explained that some customers received no bills while others received large bills. The city could not calculate its collection rate and said this issue isn't something expected to be resolved until late 2024. It also referred to the malfunction of water meters, which had contributed to a 30 percent decrease in revenue, that 1,400 bills were stranded or not sent or received by customers, it talks about customer complaints, a lack of routine monitoring and maintenance. It said that the city failed to collect and record continuous pressure data which could identify problems within the system, it talks about the water in storage tanks that weren't cycled, and then it talks about frequent line breaks. It said a report from 2017 through 2021 said that the average line break was 55 per 100 miles of line, far exceeding the 15 per 100 miles a year that is considered safe.

So my question is, these things that you see here in this report specifically as it relates to the city of Jackson, it appears that it was definitely a contributing factor to the crisis. But I think what you are saying is this is not unique to the city of Jackson, that this is something that many of our major urban cities, particularly older cities that have not had recent growth, that they are experiencing—and this is the reason that there needs to be both State, Federal, and local action to address these problems Nation-wide. Is that correct?

Mr. FUGATE. Yes, sir.

Mr. GUEST. Thank you, Mr. Chairman. I believe I am out of time.

Chairman THOMPSON. The gentleman yields back.

The Chair recognizes the gentlelady from Florida for 5 minutes, Mrs. Demings.

Mrs. DEMINGS. Thank you so much, Mr. Chairman, and thank you to all of our witnesses for being with us today and for being here with the I think sole purpose of solving problems. That is exactly I believe why we were elected too, not just to point fingers. If pointing fingers helps us solve problems, then let us do that. But we are here to solve problems.

I appreciate the remarks of the Chairman, the remarks of the Ranking Member, who asked the question, how did we let this happen after Flint, how do we find ourselves—ourselves—in this situation again?

Mr. Fugate, it is great to see you as a fellow Floridian. You said that probably there were some people when Jackson occurred that said, oh, that is just Jackson. I believe that is probably true, but it appears on all that I have heard this morning is that we knew, or we should have known, that Jackson was going to happen. But you also said when asked the question about other jurisdictions, that it is just a matter of time.

So, you know, are we going to have a proactive approach to dealing with this or are we going to sit back and just let it be just a matter of time and say, oh, well, that is just whatever city is next? We know that communities of color and rural and small communities have been left behind and left out of the process. So we know that. So the question today before us today is how do we fix that, how do we make that right, and how do we make sure that every community, regardless of their zip code or where they are will have access to quality drinking water? We also know that one size does not fit all.

Mr. Fugate, I will start with you. How do we develop a framework that will properly address evolving threats? We know that systems have failed because they weren't adequately, you know, prepared in the first place. But we know or we should know how do we develop the frameworks to make sure that we are ready for future threats, more extreme weather, flooding, cyber attacks?

Mr. FUGATE. Well, we are doing a lot of it across a lot of agencies, but when I was looking through all the reports, I couldn't put my finger on any place that says give me a list and triage that list of our greatest risk and priorities for making these investments. You have EPA who does their work and does very well and identifies these issues, you have CISA from DHS, looks at cyber risk and the vulnerabilities infrastructure, but one of the things that we are seeing with NOAA and others are starting to do is mapping more of what extreme rainfall looks like and what those vulnerabilities are.

I think, you know, the General Accounting Office has made recommendations back to Congress that probably with EPA's lead, but with the Corps of Engineers, with FEMA, and others that provide a lot of this funding, can we be more targeted and a term I learned from a mentor, move away from discovery learning and go find out which of our systems now are most vulnerable and look at how we prioritize that target. It may not necessarily be, you know, a division across populations or States that equitable, it may be there are parts of the country that have different risk, different needs between droughts and extreme rainfall events that our systems weren't built for. Notwithstanding maintenance issues, funding issues, training issues, leadership issues, it is just all accelerating. I think a triage list was where I would start. Get all the agencies together, come back, and say can we come up with a criteria to measure against water systems? Don't forget, the little systems are just as vulnerable. Maybe only a couple hundred people, maybe only a dozen people, but if the water goes out in the city of La-

crosse, not only do they not have drinking water, they don't have firefighting water.

Mrs. DEMINGS. With the limited time that I have, Mr. O'Connell, certainly I am aware of the challenges of small rural communities and you have talked about them, lack of budget, lack of personnel, resources. What are your recommendations on how smaller communities, rural communities can prepare themselves moving forward for cyber attacks?

Mr. O'CONNELL. Bottom line is training and people to provide that training in the no-cost situation.

As I said before, the situation is going to get much worse. We are facing 50 percent reduction in utility jobs in the next 3 to 4 years Nation-wide, 75 percent in New York State alone. So you think you have got difficult times right this minute, give yourself 3 or 4 years and magnitude this problem 10 times over. We need more people in the field to go to the utilities in a no-cost situation so that we can provide these people with the proper training and give them more preparedness of what is to come down the road.

Mrs. DEMINGS. Thank you. I am out of time.

Mr. Chairman, I yield back.

Chairman THOMPSON. The gentlelady yields back.

The Chair recognizes the gentlelady from Tennessee for 5 minutes, Ms. Harshbarger.

Mrs. HARSHBARGER. Thank you, Mr. Chairman and Ranking Member and all of the witnesses.

I want to follow up with what Representative Demings was talking about. Mr. O'Connell, you said you believe that the bureaucratic hoops that small utility companies need to jump through just to secure those Federal grants deter a lot of these small water utilities from pursuing these funds. You know, I live in a rural district and my office has helped specific counties secure funding through these grant programs. What kind of changes? You talked about different things like the training at not cost, but what kind of changes should be made to cut the red tape that is deterring these small utilities from pursuing these Federal grants? What could be done to better inform these small or rural utilities of these opportunities, sir?

Mr. O'CONNELL. My opinion goes back to what I said before. The small utilities do not have the resources. They don't have ITT people, a lot of them are part-time, a lot of them are retirement people that are working there part-time. The only answer that I have right this minute is we need to have more people that can go to these communities that can intercept between utility and FEMA and the Federal programs to cut the red tape, to make it easier for them, and to be more aligned with how they can get their money to take care of the problems before the fact, during the fact, and after the fact.

Mrs. HARSHBARGER. Well, if they—like you said, if they can't hire certified operators, whether they have the capacity to hire them, the funding, whatever, how in the world are they going to dedicate a cybersecurity and how are those cybersecurity personnel to confront the threats that we face today? Is it just increased funding? Or tell me what else we can do.

Mr. O'CONNELL. I don't have the full answer to that with small communities. I can tell you that a lot of communities around the country still don't have access to computers. Many rural areas don't have computers, they don't have IT people. The only thing that I can describe as a reasonable answer is to National Rural Water Association to the State affiliations that we all have, all 50 States have, and to provide the resources that we need to put more people in the situation to educate them as best we can from what the resources they have to protect their interests.

Do I have 100 percent answer to that? I am sorry, ma'am, I don't. If I did I would be a rich guy, but I don't. I don't have the answer to the rural water situation. I can only offer what we can do now and in the future to educate the personnel that is there with the limited resources they have through the National Rural Water organization, which is a nonprofit organization that goes to the affiliate utilities and will help them through any kind of emergency manner or any other manner that we can provide the services for to make themselves whole.

Mrs. HARSHBARGER. Well, sir, you said that they didn't have to come to you, you would come to them. So how do we approach that? What can I do for some of those water utility groups? How do we get you to come to them?

Mr. O'CONNELL. Simple answer, you pick up the phone, you call your State rural water association and we will be there within 24 hours, if not sooner if it is an emergency. If it is an emergency, we are on call 24/7, 365 days a year and we react to emergency and the necessity of that and will put people there immediately.

Mrs. HARSHBARGER. Well, I appreciate that and, you know, I will be visiting some of those water utilities back in my district in the month of October and we will make them aware that that is always a possibility they can pick the phone up and call you and will help them as best as we can get the funding that is needed to take care of the people they serve. I appreciate you.

With that, Mr. Chairman, I yield back.

Chairman THOMPSON. The gentlelady yields back.

The Chair recognizes the gentleman from Rhode Island for 5 minutes, Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman, and good morning to our witnesses. Thank you for your testimony here today on a very important topic.

In particular I am glad we are focusing on aspects of securing the IT infrastructure. Mr. Gadis had quite a few things to say that really resonated with me in his opening statement and I appreciate that.

In 2021 a Water Sector Coordinating Council survey noted that just over 30 percent responding water and wastewater systems had identified all their network operational technology assets and just under 40 percent had identified all IT network assets.

So establishing a complete inventory of these assets is obviously an essential first step for such entities to improve their security because one cannot defend what one cannot see.

So, Mr. Gadis, Mr. O'Connell, what are some of the challenges that water and wastewater utilities face in identifying their IT and OT assets? What Federal assistance is needed to support and accel-

erate efforts by water and wastewater systems to improve visibility of their network assets?

Mr. GADIS. To start out with, thank you very much for the question.

But I think that first of all it takes a village. I know at D.C. Water we have a large IT department that is protecting us on a day-to-day basis, but also it is partnership locally, either with your State or your city. I will tell you the District of Columbia, we have a great partnership with Mayor Muriel Bowser and her team, which they assist us not only on infrastructure but also taking a look at the IT side of our business as well. So I think that it is key that utilities take advantage of State, Federal, and also in their city getting those services for those utilities, but also looking to EPA and others to help them as well.

The last thing I would say is unfunded Federal mandates are putting a lot of pressure on utilities, not only on the cyber side, but the infrastructure side. I think that is something we need to begin to take a look at as a community and also without putting the burden on the rate payers, because our rate payers have to make a decision, do they pay their water bill, do they pay another bill, or whatever it may be. But the Federal mandates are pushing this very hard as well on utilities.

Mr. LANGEVIN. OK.

Mr. O'Connell, do you have any comment there?

Mr. O'CONNELL. The comments he made, it always comes down to personnel and monies—unfunded mandates as he spoke to. To give you an example, what do I do when I need ITT help—I am fortunate enough to have a daughter who works at Pinnacle Investment. She has team viewer on my computer and when I get into a jam she helps me. So I have to use resources beyond and above what I have available at my community.

I am sure other communities use the same practice. Because we are in rural areas, we don't have money for IT departments. We are not a city. The best resource that I can actually tell you that we have to fundamentally take care of the on-going system problems is through the State Association that we have in rural areas. There is New Jersey and New York and all the rest of the States have. That is the only real resource we have to combat these expenses that are contributing toward keeping our water and wastewater systems safe.

The ultimate goal is that we all want to keep our water safe. We all live in our communities, we drink our water, we fish in our streams, we fish in our lakes. We are doing the best we can with the resources we have. Fundamentally, is it going to get worse? The answer is yes. Fundamentally, what is the answer to that? Increase in training, as I have stressed upon 100 times today, increase the personnel, not to be EPA—have new regulations, but let us make them funded resources.

Mr. LANGEVIN. Thank you. OK.

Before my time expires, so the same water and wastewater survey found that 73 percent of responding water and wastewater utilities had between zero and 2 full-time employees dedicated to OT security. So both our witnesses there, I can appreciate the resourcing challenges that many water utilities face in hiring the

personnel they need to secure the systems and assets under their control.

My question is, are there other challenges, such as lack of availability of cybersecurity talent with specific knowledge of the water systems and also that also need to be addressed? If so, how can the Federal Government and Congress specifically help water utilities address those challenges?

Chairman THOMPSON. Is there a particular witness?

Mr. LANGEVIN. Mr. Gadis. If you want to start with Mr. Gadis.

Mr. GADIS. Thank you very much.

I am not sure that it is—I wouldn't point immediately to the talent isn't out there. I think the talent is out there. I think it is about building the team to do so. As I stated earlier, sometimes what is keeping utilities from building this team is that they don't have the funds. You know, chemicals, I know for us at D.C. Water increased by \$17 million in 1 year—\$17 million. That was 100 percent increase. When you have those sort of things happening, it is tough to put together a team to be able to fight cybersecurity.

Then also again, the unfunded mandates come into play.

So I think when you start looking at all the expenses, I think that is what is keeping a number of utilities from protecting themselves from a cyber standpoint. But it is very, very important that they do so.

So we must change—

Mr. LANGEVIN. Point well taken. I know my time has expired.

Thank you, Mr. Chairman. I yield back.

Chairman THOMPSON. The gentleman's time—thank you.

The Chair recognizes the gentlelady from Florida, Ms. Cammack, for 5 minutes.

Ms. CAMMACK. Well, thank you, Mr. Chairman, thank you to Ranking Member Katko, and thank you to our witnesses for appearing before the committee today. Of course I want to give a special shout-out to my constituent, Mr. Fugate. Thank you for being here. Of course I had to tell my team when they said Mr. Fugate is coming. I said, no, we are from the south, it is Fugate. Just like it is not Lafayette, it is Lafayette.

Now, this is an incredibly important topic and it has been a little funny to hear so many names of our community heard in this hearing today, like Lacrosse and Brooker and Worthington Springs, because we do represent a large swath of rural communities that really do struggle when it comes to water infrastructure. Being a hurricane State, I think Florida knows best some of the issues that we face when it comes to preparedness and resiliency.

It is clear that our Nation's water system is one of the most important infrastructure components in the country. The decentralized nature of the system, often run by local governments, can make it challenging when addressing improvements and security for water infrastructure. Now, every community has different needs and resources when it comes to water. I think it has been said here before, the one-size-fits-all approach does not work. I think both Republicans and Democrats can agree on that fact. But it is also that decentralized nature that I think also is helpful in limiting some of these major attacks that we have seen.

So I am going to jump into my questions starting with you, Mr. O'Connell.

My district's neighbors in Oldsmar, Florida, just barely avoided a deadly attack last year when their drinking water was poisoned by a bad actor. We are incredibly thankful that the incident didn't end as devastatingly as it could have and we continue to process lessons learned from the attack.

Now, I understand the debate centers around connecting industrial control systems to the internet and we see that interconnected systems offer opportunity for greater efficiencies and modernization. But, again, as I mentioned, there could be a greater threat when they are all connected.

So first part of this is would you say that it is common practice to have rural water utilities connect their systems to the internet? That is the first part.

Second part, if yes, do you think that these utilities have the proper protocols in place to protect their systems from cyber threats that have the potential for cascading impacts across operational technology and informational technology systems? If no—and I know I am making this very complicated, but I have an end game here, I promise—if no, what could we do help the smaller utilities in Florida, but also around the country and across the Nation, both modernize and secure their systems?

I know, I threw a lot at you.

Mr. O'CONNELL. That is OK. I don't know if I can answer it all anyway, so.

The first part of your question, I would say no.

Ms. CAMMACK. OK.

Mr. O'CONNELL. I would say I don't now what the percentage is of people that have remote access to HMIs and over their cell networks. It is becoming more necessary for them to do that as the technology moves forward and the water and wastewater industry, I think it is going to be more common. More rural utilities are going to have to adapt to that because just on the functionality of the water and wastewater equipment, which I am very savvy on—I work for a company that provides wastewater and water equipment for all utilities in New York State—so as we move forward with that technology that is going to become more of a common problem with rural areas and all areas, because we are networking through our cell phone systems to be able to act quickly or quicker to problems that exist in the water plants and the wastewater plants.

What is the answer to having that so it is not being hacked into? I am not sure I can answer that question to you. I can surmise and give you my opinion that we are going to have to have more protection on our cell phone systems, there are going to have to be different passwords. Things of that nature will have to be implemented. Unfortunately for a lot of folks like me as a farmer, it takes a lot of training for me to understand how to do that. So that is when it becomes back to State associations, Rural Water, to provide that kind of resource to help them with that. But reality is with the new equipment coming out, we are all going to have to be more savvy with that because you are not going to have a choice.

The other problem is our product lines that are becoming more and more available to the rural areas, we don't have repair people like we used to. So they are going to have to rely on internet services to do in-house repairs.

So I tried to answer your question. I hope I did. If not I apologize.

Ms. CAMMACK. Well, I appreciate it.

I know my time is expiring, Mr. Chairman, but I do have a record that I will submit—or a question for the record that I will submit for Mr. Fugate as well.

Thank you. I yield back.

Chairman THOMPSON. The gentlelady's time has expired.

The Chair recognizes the gentlelady from California for 5 minutes, Ms. Barragán.

Ms. BARRAGÁN. Thank you, Mr. Chairman, for holding today's hearing to improve the resilience of critical infrastructure for underserved communities.

As the climate crisis worsens communities of color are bearing the burden of a lack of under-investment in our infrastructure. We see it in Puerto Rico, where Hurricane Fiona caused an island-wide power outage, we see it in Jackson, Mississippi where residents in the year 2022 do not have access to clean water. This has also happened in my district. A few years ago homes in the city of Compton had brown water coming out of their faucets.

As agencies like FEMA make investments to improve the resilience of critical infrastructure, Congress must advocate for underserved communities to be front of the line.

Administrator Fugate, the event of Hurricane Maria 5 years ago devastated Puerto Rico and left the island with no access to clean water for months and the recovery had still been on-going. While billions of dollars in aid were provided, including to the utility, Luma, to improve the power grid, not enough has been done to fix Puerto Rico's power grid and strengthen their infrastructure.

What additional steps do you recommend Congress take to make sure that the residents of Puerto Rico are benefiting from the Federal fund that Congress provides for the recovery from Hurricane Fiona and for greater resilience so that this does not happen again?

Mr. FUGATE. Representative, two things. No. 1, we have to really be stringent in making sure that we rebuild to much higher standards, not just put it back the way it was.

The second thing, and the Chairman knows this, I have spoken of this before, we have got to speed up the recovery process. Our recovery process when I was at FEMA coming in at 5 years had barely scratched the surface on Hurricane Katrina. When I left FEMA I approved \$1 billion project for water and wastewater repairs for the city of New Orleans water and sewage systems, 10 years after Katrina hit. We have got to speed up the process of getting capital in quickly, spent wisely, and implementing the improvements to these systems. The time frame between disaster has increased to a frequency that no longer allows the luxury of decades of recovery.

Ms. BARRAGÁN. Thank you for that.

I know after the last hurricane a Congressional delegation led by Speaker Pelosi was there and we heard about, you know, people who also were having a hard time with documents and papers to

FEMA. So I do hope there will be efforts to make sure to do everything we can to assist.

I want to follow up with you, administrator, about something I read about this morning. A roughly 50,000 roof-top solar arrays have been installed across the island, the vast majority of which are hooked up to a batter back-up system. The year before Maria only 5,000 solar systems were in place and few of them had batteries. Now, Hurricane Fiona has put these recently installed systems to the test and reports have shown that they have helped maintain power for buildings where it has been installed.

Mr. Administrator, how can Congress encourage more roof-top solar and battery systems for critical infrastructure in Puerto Rico and throughout our country?

Mr. FUGATE. I think it is a great idea. Personally I would like to try to figure out how HUD and other agencies, as we are doing affordable housing, we are not talking about putting solar in to run everything. We are not talking about running the HVAC and everything, we are talking about enough solar to keep the refrigerator cool, keep the fan on, charge electronics, provide the ability for medical equipment to work. That is not an outrageous cost. The technology already exists. I think every opportunity when we go and rebuild, every time we provide funding to homes, we ought to be looking at the opportunity to provide a back-up emergency power source such as solar so that they have minimal functionability. Because I have been to enough hurricanes, trust me, that first couple of days without power is an inconvenience. About the time you get to week 5, people start suffering and medical conditions get worse and the cost to us as responders continues to increase, to the tax payers providing services.

So things like rooftop solar, not trying to do the full 100 percent back up, providing a minimal viable amount of power with rooftop solar and battery back up to me is like a no brainer. We ought to be trying to figure out how across our programs we can make it available so when the power does go out, and we know it is going to go out in hurricanes, it doesn't devastate our citizens while they are waiting for restoration time. Because our systems are not built to withstand these storms. It may be faster to build resiliency at the household level while we are trying to build resiliency across our grid.

Ms. BARRAGÁN. Well, thank you. I do think we need to invest in things like clean energy micro grids for critical infrastructure. In underserved communities, these are the kinds of investments that we need to make for resiliency. I have a bill called the Energy Resilient Communities Act for that.

I will make sure to also provide my other question that I have for Mr. Gadis that I didn't get to for the record.

Thank you.

I yield back, Mr. Chairman.

Chairman THOMPSON. Thank you. The gentlelady yields back.

The Chair recognizes the gentlelady from Iowa, Mrs. Miller-Meeks, for 5 minutes.

Mrs. MILLER-MEEKS. Thank you, Chair Thompson and Ranking Member Katko, thank you to all our witnesses. This is an interesting discussion that we are having today, both on the cybersecu-

rity front—and some of the questions I had have been asked and answered, so I won't ask for those to be expanded upon.

But I am in southeast Iowa, which has both urban but a lot of rural areas. I have met with my Iowa Rural Water Association and in fact I am on a rural water association. I drink the tap water, cook with the tap water, and feel very secure. But it is interesting, Mr. Gadis—and it is not a question directed at you, but I just want to underscore something that you said. Too often this happens in Congress and in State legislature as well. You said unfunded Federal mandates cause issues. So whether that is issues we have heard today about work force, having a labor force. While in Washington, DC it may not be a problem having IT or cybersecurity, it certainly can be an issue in other rural areas where there are IT people but they don't want to come out to a rural area.

The cost of supplies and activities. When I have spoken with my rural water association, my State rural water association, you know, the regulations that they have that come down from the Federal Government and from EPA, even if it is the chemicals that they are measuring, what they are measuring, the amount which are things that they feel are unnecessary given their long history makes it more challenging for them to do the job that they are doing and increase the requirements. So whether it is the challenge it is to work force, the cost of supplies, the time and travel necessary to do things that they feel in their long experience in keeping water clean is unnecessary. I think when we are talking about giving people training, we also need to look at what credentialing we are requiring, what education we are requiring, and are there other ways to provide training for people to do these jobs, especially in rural communities?

So, Mr. O'Connell, in the United States, 91 percent of active drinking water systems serve communities with populations under 10,000 people, to your point. Furthermore, 60 percent of those serve populations of 500 or fewer. So given this fact, can you talk about how critical it is for small and rural water utilities to have proper resources and funding?

I think also, Mr. Fugate, you mentioned that not missing the opportunity to serve our rural systems.

Mr. O'CONNELL. The system that I take care of is 360 taps. So I am kind-of familiar with what happens in small systems.

We are lucky that we have had resources to provide safe water and infrastructure for wastewater. We don't have a wastewater plant, we just have a—we disburse water from a neighboring community that supplies us with water. I have been very active with educating our boards how crucial this is to keep up on infrastructure and putting money away for future developments and repairs. I think it is a planning thing, I think it is a training thing, I think it is educating the people that you work for, our boards. Unfortunately in New York State the boards in the small towns and communities and villages are not required to have board training. So it is up to the water operator, the wastewater operator to not step on too many toes and to educate those folks that really give us our orders and what to do and how to spend our money on what we have to create for the future. That is basically a network of monies to be utilized to keep our system as great as we can possibly make

it. Great is not the great word I want to use, but it is the word that came out.

We are proactive in the little community that we have of 360 hook-ups. Are we in debt? The answer is yes. I think the infrastructure was worth it. I think they thought it was worth the long-term plan. The training from our rural water association has mitigated us not to get in trouble with our EPA or our DOH, Department of Health. If it hadn't have been for those resources that we could utilize within our small community, we would probably be in trouble.

Mrs. MILLER-MEEKS. I would agree with that. Our local and State rural water associations have done a tremendous job.

In your testimony you stated—and I know that my time is running out, so if you want to answer this question after the fact and submit it written, that would be great.

But when small towns like mine need help in operating our water utilities, understanding new and complex Federal Clean Water Act and Safe Drinking Water Act requirements, receiving that required training to maintain our licenses and learning about the latest preparedness and resiliency practices, we call on our State rural water association and ask for technical assistance. More to the point, and this also underscores what Mr. Gadis said, would you be able to elaborate—and it is fine if you submit this in writing—I know that our time is limited—what are some of the complex Federal regulations water and utilities deal with every day that you all may find are overreaching and further complicate your ability to do the job of keeping our water clean and safe?

If you would submit those to us afterward I would greatly appreciate it.

Thank you.

Chairman THOMPSON. Thank you. We will make sure that the answers are responded accordingly.

The Chair recognizes the gentleman from Michigan, Mr. Meijer, for 5 minutes.

Mr. MEIJER. Thank you, Chairman, and to the Ranking Member for holding this and to all of you for being here today.

I think the shared goal of this hearing is so that we get out of the mode of reaction, right. I am just broadly categorizing. We are talking about disasters that occur and the impacts because of a lack of preparation, and those that occur because of neglect. Jackson, Mississippi was a combination of the two. In Michigan, in Flint, it was neglect, in Benton Harbor, it was neglect. Each time the Federal Government will—I think in Michigan, I think both occasions the State government, but then with some Federal resources had to come in after the fact. But while that problem is waiting to be addressed it is the disadvantaged communities that are suffering from that, that are having, you know, tainted drinking water, that are having to find other means of getting what should be an expectation in a super power in the 21st Century, which is you turn on the tap and clean potable water comes out.

Ms. Conner, you mentioned that that lack of transparency around water quality and other public services, that that has engendered a sense of mistrust and a declining belief that government is actually there to serve the people, especially on a munic-

ipal level. I could not agree more. I think one of our challenges—because nothing we are talking about here on the infrastructure side is rocket science, right. We have had these systems for a century. There has obviously been improvements in transportation, there has been improvements in cleanliness, but we don't need to reinvent the wheel here. Yet I think the two most pernicious words in infrastructure are deferred maintenance and then what happens as a result. All too often we are living on investments in this country that were made—you know, when we are talking about our electrical grid, largely in the post-World War II-era, when we are talking about our highway system, it was also post-war, our aviation transportation sector in sort of the 1960's, 1970's, and in some cases the 1980's, but when it goes to our water infrastructure, I mean that could go back a century or a century-and-a-half. Downtown Grand Rapids, when we were preparing a new area for a stadium they found water lines that were wooden, that had been carrying water for upwards of 170 years—or I should say 150 years in that case.

How do we get out of that cycle and how can—to the point on transparency, you know, not just the quality today, but the known risk factors that will impact quality down the line. We have done fantastic work across the country of identifying lead drinking water lines. I think that has been strongly beneficial. Then again, what we had in Flint was it was an emergency program to replace because the lines had already been degraded because of the different Ph balance of the water coming in from the switch source rather than what is far more cost-effective and far more sustainable on the community level, which is doing that one whole project. You are replacing the sewer main, you are replacing any lead, you know, connected lines while you are also taking care of maybe laying down fiber or some other improvements.

I guess I will set that aside, but just say what could the Federal Government start to require or suggest or create common standards around the quality of existing infrastructure, you know, the forward projections of financial burdens and financial opportunities? You know, how do we get out of that cycle so that citizens can be empowered to demand of their public officials that they not, you know, sacrifice the investment today that should be made because maybe there is a shorter-term priority, only to find themselves in a position where they are betraying the confidence of their constituents when that moment comes?

Ms. CONNER. Thank you so much for the question.

One of the things that the Federal Government could do is really ensure that there is a transparency in disaggregated data. The data is not really there when you look at, for example, the data that is available within the EPA's website is not disaggregated as it relates to race. It basically kind-of overarchingly says communities of color and it also doesn't go really disaggregated into types of pollutants that exist within communities. So that kind of information is really helpful.

Additionally, the streams of funding oftentimes go to the States. So at the Federal level if there were more streams of funds that actually go directly to communities, that would help to ensure that folks could get the resources that they need more quickly.

Oftentimes, those streams are loans. So if you are already in a situation in a community where you don't have the money to actually fix those problems, a loan is not really what you need at that moment. You need actual direct investments into the communities. Then the technical assistance as well just needs to be reflective of what they need.

Mr. MEIJER. Thank you, Ms. Conner.

I am mindful my time is almost expired. For just Mr. Gadis, anything you wanted to add obviously is—I mean a municipal water system that has seemed to have done a very good job of making those investments and planning on the financial side.

Mr. GADIS. Yes, real quick. I mean what I would add, again it falls back to I think communication and being prepared and really having a team that can provide the information that is needed in order to attack and actually do the number of things that need to be done within your system. Then prioritizing. Then finding out what assets are vulnerable and then making smart decisions on what assets you repair versus allowing them—or you replace versus allowing them to go to failure.

So in the District of Columbia one of the things we talk about is Lead Free D.C. That has really impacted and the—from an equity standpoint that regardless of race, color, whatever it may be, you are going to get quality water. So we are going to measure and make sure if you have lead we get it taken out, because no one should be drinking from lead service lines.

So I think that is one of the things I think that we have to do throughout the country.

Mr. MEIJER. Thank you, Mr. Gadis.

Thank you, Mr. Chairman, for indulgence.

Chairman THOMPSON. Thank you. The gentleman yields back.

The Chair recognizes the gentleman from Texas for 5 minutes, Mr. Pfluger.

Mr. PFLUGER. Thank you, Mr. Chairman.

What a great topic to be discussing and talking about the critical infrastructure. You know, as the threat continues to increase around the world in the cyber domain, we have to be cognizant of how we are defending. So a lot of my questions and the lines of questions have been asked, but I will go to Mr. O'Connell.

You know, representing a rural district I appreciate what you do. The entire panel of witnesses, thank you for your time today. But my specific question is, you know, what are you getting from CISA or the EPA by way of good actionable intelligence that helps you bolster through your organization and therefore the communities? Is intel flowing? Is the, you know—are the roundtables happening? If not, what do we need to do better?

Mr. GADIS. I mean I can only speak on behalf of the District of Columbia and D.C. Water. We have a great relationship with the EPA. The information is flowing, we are interacting very well, and I will say that one of the things that impacted not only me but the utility when I first came to the District of Columbia Water was a boil water alert that we had to put out. That helped us in building our relationship with EPA because they guided us, they helped us through this. That is very, very important I think in any community that you live in. So EPA has been fantastic for us.

Mr. PFLUGER. Yes. Well, that is good to hear. In the urban areas, which obviously at population centers.

Mr. O'Connell, John O'Connell, with National Rural Water Association, what is your take on information flows specifically from CISA?

Mr. O'CONNELL. I can tell you that we are involved with roundtable discussions. Back a few years ago, I would say as much as 10 years ago, we weren't invited to the table. Recognizing that what we do now is where we make house calls, we are more active in EPA's and CISA's roundtable discussions to get our input as they recognize that 91 percent of the communities are under 10,000. So we are being invited, we are in discussions with all these agencies, we do interact, we do give our testimonies and statements and our views on new EPA rulings and all those structures that increase the cost. We certainly don't want to increase the cost when not necessary. We want to keep our water safe.

Might I add, you know, we are hearing all the negatives here today, but, you know, in my experience of 34 years in this business, we still have the safest water in the world. The safest water.

Mr. PFLUGER. Yes.

Mr. O'CONNELL. So I just want to stress that.

Mr. PFLUGER. Well, that is a good point. Look, we don't have these hearings to pat ourselves on the backs, but, you know, rather to refine and sharpen, you know, the things that need to be refined and sharpened. So it is—you know, it is nice to also give some credit where it is due.

My advice and request to everyone is to please let us know. The information flow is really important, whether it is in the pipeline industry, as we saw with Colonial, and a lot of things, positive things came of that. My district, a town that I represent, Odessa, Texas, had some issues with water just recently. So these are things that we are very, very keenly interested in.

Once again, Mr. Chairman, thank you for holding this hearing.

With that, I yield back.

Chairman THOMPSON. Thank you very much. The gentleman yields back.

We have had all our questions from our—the Chair recognizes the gentlelady from Texas for 5 minutes, Ms. Jackson Lee.

Ms. JACKSON LEE. I thank the Chair, thank the Ranking Member for holding this hearing and recognize the importance of dealing with the question of water. We are seeing the prices from Pakistan to hurricanes in Puerto Rico and into the Caribbean.

But specifically I want to raise the question, Black and Brown communities are one of the most vulnerable groups when it comes to the effects of climate change and extreme weather events. Often they do not have the resources necessary to brace or evacuate during extreme weather, but more importantly, many of the communities that they may live in do not have the funding for infrastructure rebuild.

Ms. Conner, knowing you work, could you please describe the challenges climate change and extreme weather events have on vulnerable populations, including Black and Brown communities? What can the Federal Government do to help communities confront these challenges?

As you well know, I think one of the major evidences of that is Flint, which I went to many times, and my colleague, Chairman Thompson, has faced the challenges that he has worked so extensively on in Jackson, Mississippi. There are other less-known incidences where there have been water crises in minority and poor communities.

Ms. Conner.

Ms. CONNER. Thank you so much for the question.

What we believe within our experience with the NAACP is because the funding streams do not actually go to the historically disadvantaged communities, for example, in Jackson. The funding streams typically go through Mississippi. So if the State decides that it does not want to create a system that will allow for Jackson to get funding that will be able to help the water infrastructure, then Jackson is kind-of stuck. So there needs to be more streams of funding that actually go directly into the communities.

Then oftentimes there is technical assistance that is available, but it doesn't actually reflect what the communities are asking for at that moment. So, for example, if there is technical assistance in Jackson, Mississippi and all they get out of it at that time is a report, but they are saying, well, we actually are ready for the implementation phases, that technical assistance is a mismatch. So even though there is Federal funding and there are streams for technical assistance, it is not actually what the communities need at that moment.

I mentioned earlier the data. There is not a lot of disaggregated data as it relates to toxins and pollution in communities. When you look at the indexes that are readily available, it is really hard for folks to actually figure out what is happening within their communities.

Then also, because there has been deliberate disinvestment for years within historically disadvantaged communities, Black and Brown communities, there does need to be a prioritization of their infrastructure. This isn't to say that all infrastructures don't need to be reviewed, but when we know that there has been a deliberate disinvestment, then there has to be a prioritization at the Federal level in understanding an acknowledgment of how that has created even more issues for a place like Jackson, Mississippi. For example, Jackson's problem has only increased. It wasn't in the billions before, but because there continues to be deliberate disinvestment in Jackson, Mississippi, now they are at the billions as it relates to being able to fix the problem.

Ms. JACKSON LEE. Thank you so very much.

I think that we need to reinforce the fact that the State of Mississippi, the Governor in particular, that gave no great answers, was really at the center point, the focal point of not directing funds. I am glad the bipartisan infrastructure bill has equity provisions in there and we can insist that all communities, those communities that happen to be everyone's communities, that can have equity in water infrastructure rebuild.

Let me ask—Mr. Fugate, we have worked together over the years. Let me quickly ask you in your capacity formerly as the FEMA director. I just came back from Pakistan where the flooding was catastrophic. Now we see what is happening in Puerto Rico.

Help me understand very quickly in overseeing flood disaster responses in water treatment facilities, what specific assessment do you recommend be made to measure any risk on current water facilities? What are some of the key emerging risks water facilities may face? Would you add is there any appetite for attacking our water facilities by terrorists? Is that something that in your time of service was on the radar of FEMA?

Thank you very much.

Mr. FUGATE. I will answer the last question first. Water treatment facilities were on our radar when they got damaged in a disaster, not before.

The other question, as you saw in Pakistan, the way I would approach this is—and looking at the flood threat. There is a lot of other stuff you are talking about, cyber, maintenance, deferred maintenance, all that, but just on flood risk we have got to get away from looking at probabilistic of 100-year flood event, whether or not a facility is safe. What we should be bottling is how much water does it take before a system fails? Are we talking about inches or feet? So that way we will know how to triage our systems that have the greatest vulnerability to extreme rainfall events. We know this is no longer tropical. I mean it used to be everyone thought, well, this is a hurricane problem. We are seeing feet of water. Now, think about this, feet of water in communities setting record-setting flood events for infrastructure that was built for what was called 100-year flood. It is failing and preexisting conditions make it worse. We are behind.

So I would say the climate has changed, we haven't. What we built wasn't built for—we need to go back and look at how much water does it take before it fails, not what the probabilistic rainfall events historically have been.

Chairman THOMPSON. The gentlelady's—

Ms. JACKSON LEE. Thank you so very much.

I yield back.

Chairman THOMPSON. The gentlelady's time has expired.

Let me thank the witnesses. You have been excellent in your presentations.

Climate change is real, it is not just for conversation. We can see it happening in our communities every day.

But I also want to associate myself with the statements made by the Ranking Member relative to having some kind of review of how Jackson, Mississippi was treated by both the State and Federal agencies in the lack of funding. There is no question about it. The data will reflect what is and what is not. We look forward to having that review.

The other thing is I represent a part of the country with significant rural water systems. One of the holy grails is to talk about do we merge them because they are too small. Most people would say, look, that is a no-brainer. You don't want to get run out of town, don't bring it up. Bring it up, you get run out of town. But there are some efficiencies that you just have to have. As either through technology or merger, you will have to have them. So I know for the rural water people who actually came in and helped an urban center in Jackson get its system back up to going, that

response mechanism worked. But it is a matter of infrastructure investment.

We just voted for a \$1 trillion package that we put in place. The Ranking Member was one of the few people on the Republican side who voted for it. Last check, water is wet. Other than that, there is no party affiliation. So I really wish we could have gotten more support for it.

Now, the question is whether or not that \$1 trillion will be going to the communities who really need it the most or will it just, like all other monies, just get put in the pot and the haves get it and the have-nots don't. I hope we have a better solution to address that because we really need it.

With respect to equity and FEMA, we are absolutely trying to move that conversation. I have had several communities recently flooded completely, but it didn't meet the damage threshold, but the good people of Rosedale, Mississippi, Mount Bayou, Mississippi, are some of the finest folk in the world and they deserve to be addressed in as helpful a manner as possible and not just told well the damage—you are not rich enough to be covered. We are a better country than that. If we were in Beverly Hills, California, one block would have qualified for a potential damage assessment because they are rich enough.

So those are the public policy issues we are going to have to look at. Again, I thank our panelists for raising a lot of those issues that we have today. Unfunded mandates are a challenge, but some of what we do is in the good of the country. We just have to have them. This is where Congress takes the collective wisdom of the public before they decide on that public policy.

I would also like to recognize Bill Simpson in the audience, who is a—I would call him an old friend, but I don't want to date him too much. But he is a good friend and works in the rural water community historically.

So it is a good conversation we are having. Ms. Conner, I know you will do your best to help the people of Jackson. There are regulations that have to be followed. We need to make sure that as we send monies to communities, that those monies get to those communities and they not be penalized by any entity. So I look forward to the next step in that area.

So let me thank the witnesses for their testimony and the Members for their questions.

The Members of the committee may have additional questions for the witnesses and we ask you respond expeditiously in writing to those questions.

The Chair reminds Members that the committee's record will remain open for 10 business days.

Without objection, the committee stands adjourned.

[Whereupon, at 12:10 p.m., the committee was adjourned.]

APPENDIX

QUESTION FROM HONORABLE DINA TITUS FOR W. CRAIG FUGATE

Question. You led FEMA during several notable emergencies. From your experience, what has changed or improved in our water infrastructure since the 5-year anniversary of these hurricanes? Are U.S. territories more or less prepared? How do you suggest that FEMA operationalize its Pre-Disaster Building Resilient Infrastructure and Communities (BRIC) Program to prioritize water infrastructure resilience against future climate emergencies?

Answer. Response was not received at the time of publication.

QUESTION FROM HONORABLE NANETTE BARRAGÁN FOR DAVID L. GADIS

Question. Congress has worked alongside the Biden administration to pass the Infrastructure Investment and Jobs Act, to expand access to clean water, high-speed internet, and railroads. How will this increased funding help communities upgrade aging infrastructure in ways that meaningfully address preparedness and resilience?

Answer. At DC Water, our tagline, “Water is Life”, not only speaks to the core of our business, but is symbiotic of the life-giving and sustaining resource that we all need for survival and resilience. Ensuring that our county remains steadfast against incidents seen and unforeseen remains a top priority. To this end, the truth is, no community is resilient without safe, affordable, and accessible water.

Modernizing and replacing the country’s aging infrastructure is an increasingly important concern. This undoubtedly includes the country’s aging water and wastewater infrastructure. In fact, it has been said that “adapting and improving infrastructure to meet changing climate, precipitation, and water use trends, may be the Nation’s most glaring public works needs” of this time. This is not intended as a scare tactic by any means, but it is an urgent call to the “all-hands-on-deck” approaches to immediate solutions and results-driven approaches to ensure we are protecting and enhancing our communities most life-sustaining commodity, water.

The Biden-Harris administration has demonstrated an increased commitment to water infrastructure, and water utilities across the Nation’s footprint couldn’t be more grateful. Utilities small and large have already been helping communities adapt and manage the increasing needs and challenges that come with issues such as climate change, natural disasters, health pandemics, inflation, and all the other socio-economic ills, and DC Water is a National leader in many respects. What cannot be underscored, is every measure taken by the utility to continue to provide clean, safe, affordable, and accessible water requires costly investments. And, for all intents and purposes, these investments often have to be borne on the backs of already-struggling communities. This is why the attention and help from the Federal Government is so paramount.

DC Water has nearly a \$7 billion-dollar planned CIP. What is nestled in this cost, are the projects and initiatives that will not only continue the level of service we have been able to provide for the past 25 years, but also fortify our communities for the next 25 and hopefully beyond. Projects such as our Clean River Project, an on-going effort to reduce combined sewer overflows (CSOs) to the District’s waterways, our Lead-Free DC Program, established to eliminate all lead service lines in The District by 2030, our first-in-class Customer Service Programs, created to ensure we are able to meet customers where they are, regardless of where they happen to be, and our robust Cyber Security efforts which are on-going to ensure our infrastructure and the footprint we service is protected against attacks large and small—each have a cost.

These concerns are not new; however, they are growing. The utility has proven to be a responsible steward of the resources and support it has received up until

now. What we ask, is for the increased support and partnership that will allow us to continue to do the work we do best.

QUESTION FROM HONORABLE DINA TITUS FOR DAVID L. GADIS

Question. In your testimony you note that DC Water is a member of the Water Sector National Cyber Security Taskforce which fosters partnerships among the EPA, CISA, and the Water Sector Coordinating Council. As you describe it, it appears DC Water's cyber posture is more sophisticated than other water authorities.

What lessons can be learned from the inter-agency partnerships that DC Water has been a part of? How can we use this as a model for the future of cybersecurity in the water sector?

Answer. As mentioned in testimony, the primary mission at DC Water is to deliver clean, safe, and reliable drinking water to our residents. This includes protecting the water and wastewater infrastructure from potential threats, including physical and cyber attacks. While we may be leading in this effort, it cannot be underscored without coordination and inter-agency and interdisciplinary approaches of innovation.

In fiscal year 2022 alone DC Water has been able to deploy the following cybersecurity measures:

- DC Water has implemented a “Defense in Depth” or layered defense strategy using a Least Privileged access (access is granted only to those systems/resources a user needs to perform s/he’s job) model.
- The Internet Layer strategy
 - Web Access controls to prevents members from accessing known malicious websites and downloading malicious files
- Email Cyber Protection (Scans for malicious logic, sender reputation, data loss)
- The Network Layer strategy
 - Geographic Filtering (Corporate Network)—Limits by country where DC Water data and workloads can be accessed
 - Firewall Protection
 - Intrusion Detection and Prevention
 - Network segmentation between
 - Operational and Administrative Networks
 - Critical system
 - Production and non-Production Systems
- Weekly data backups
- Security Event and Incident Management (SEIM)
- The Host and User Layer strategy
 - Annual Cyber Awareness training for all users including contractors
 - Multi-Factor Authentication for all administrator and remote access and access to all high-risk assets
 - Unique user-ids and password for each separate network
 - Advance Threat and Malware protection on all host
 - Spam filtering
 - Scanning of email attachments and embedded URL rewrites (also known as “Click Protect”)
 - Geographic Filtering (Host Layer)—Extends Geographic Filtering to the remote member’s managed desktop
 - Data loss Protection
 - USB controls
 - Vulnerability Scanning
- Data Layer strategy
 - Encrypted Databases
 - Encrypted Email
 - Encrypted Laptop Hard drives
- Mission Critical Resilience Capability
 - Geographically separated Disaster Recovery site.

Understanding that cybersecurity is a journey and not a destination, we take every measure to ensure we are working with our teams internal to the organization, as well as subject-matter experts external to our operations to deploy the most robust and up-to-date programs and practices to protect our infrastructure and our people.

QUESTIONS FROM HONORABLE DINA TITUS FOR ABRE’ CONNER

Question 1. I was pleased that the Inflation Reduction Act (IRA) included \$4 billion to specifically address the on-going drought crisis in the West. Ms. Conner, as the IRA funding gets authorized and distributed, how can we ensure that the Fed-

eral Government is working with our State and local partners to get this money to water infrastructure in underserved communities that already suffer disproportionately from the effects of climate change?

Answer. Response was not received at the time of publication.

Question 2. Are there examples you can think of where Federal funding streams effectively reached low-income communities? Can we learn any lessons from past funding allocations?

Answer. Response was not received at the time of publication.

